AIR CONDITIONING HEATING & REFRIGERATION NEWS

The Newspaper of the industry

RESIDENTIAL — COMMERCIAL — INDUSTRIAL

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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

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Stories of the Week

Owner of a parking lot convoked a meeting of his employes.

"Boys," he admonished, 'we haven't had one complaint all week about dented fenders. You tell me, fellas. How can we make any money leaving that much space between cars?"

At a psychiatrist's convention a lady headshrinker recoiled when a male counterpart pinched her leg during a lecture. She almost cried out, then thought better of it.

"After all," she mused *"he* has a problem—not I."

Joe checked into a hotel after a long hard day on the road. He needed relaxation—and he found it, in the cocktail lounge. Miss Relaxation accompanied him to his room, after he registered her as Mrs. Joe.

Two days later he checked out; was presented with a bill for $400.00. Joe screamed.

"Your wife," he was told coldly, "has been here for a month."

Freedom Rises from Rebellion

"This nation is based upon law, not men," English-speaking peoples are fond of saying, rather smugly.

But wait a minute. How about Magna Carta . . . the Boston Tea Party . . . Abraham Lincoln (who suspended the writ of *habeus corpus)*. . . . The Alamo . . . Panama . . . "taxation without representation" . . . and the Eighteenth Amendment?

"Rebellion against tyrants," calmly asserted mild Thomas Jefferson, "is obedience to God."

Thundered Patrick Henry: "Give me Liberty or give me death!"

Great Britain, Canada, Australia, and the U.S.A. actually were given character and form

(Continued on Page 14, Col. 1)

Room Unit Tax Cut Unlikely This Year

Congress Not Expected To Act This Session

WASHINGTON, D. C. — While there may be a delay in the revision of the present 10% room air conditioner excise tax regulation making it applicable to all sizes of such units, on the other hand it is now considered very unlikely that any measures approving a reduction of the tax to 5% will be passed in this session of Congress.

Any chance for reduction in excise tax rates seemed to die last week when the House Ways and Means Committee gave approval to a bill to continue for another year high excise tax rates on a wide number of items.

Many of these taxes were due to expire June 30. However, the administration has stated that all present tax coverage is needed to keep the Federal government from going further into the red.

However, as reported in the June 1 issue of the NEWS, the Internal Revenue Service is not planning to revise by July 1 the present ruling on the room air

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Stockholders OK Warren-Webster Sale

CAMDEN, N. J.—The stockholders of Warren Webster & Co., here, manufacturer of heating and cooling equipment, recently approved the sale of the business to Management & Development Corp. of Baltimore, Md.

The announcement came from Warren Webster, president of the 71-year-old concern, who stated that the present Warren Webster & Co. management will retain a substantial financial interest.

Webster explained that the new owners, headed by Herbert

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Seeks 'Stabilization of Ratings'

York Explains Why It Hasn't Joined NEMA Room Air Conditioner Section

YORK, Pa.—The "fact" that the National Electrical Manufacturers Association room air conditioner program falls short of achieving a "stabilization of ratings" was given as one reason the York Div. of Borg-Warner Corp. has not joined the Room Air Conditioner Section.

In a statement prepared to answer "a number of inquiries," Austin Rising, vice president and director of marketing for York, said:

"We feel that there is a need for a stronger program with firmer provisions for enforcement than now exists. We at York are seeking stabilization of ratings which will be accepted as universal and ratings that the consumer can depend upon. NEMA has a real opportunity to come out with a clear-cut program that will lead to consumer confidence in nameplate ratings.

"In its present form the NEMA program falls short of assuring distributors, dealers, and customers of one satisfactory standard of B.t.u. ratings within the room air conditioner industry. It falls short for two reasons:

"1. Manufacturers who belong to NEMA may rate some of

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Sutton Auction Opens June 8

WICHITA, Kan.—Whether or not the "Vornado" lines of central and room air conditioners, and dehumidifiers and air circulators, will continue to be marketing under that trade name, will probably be determined on Monday, June 8.

That date is the opening day of the auction sale of the facilities of O. A. Sutton Corp. here, for a number of years a leading manufacturer of air conditioners and air circulators. On June 8, the first day of a five-day sale of the Sutton facilities, purchasers will have the opportunity to purchase the various "Vornado" product lines. There are five of these:

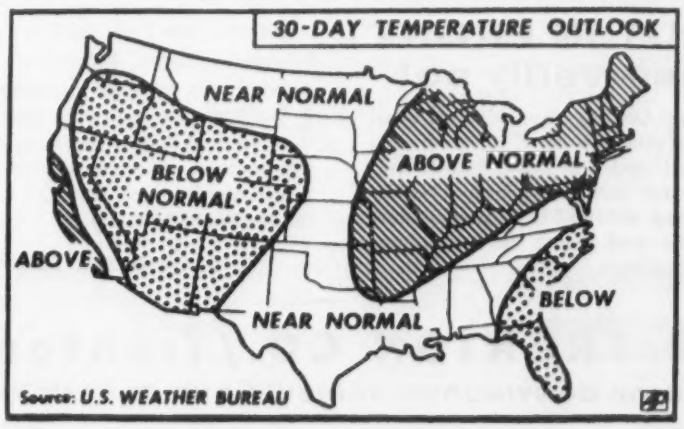
1. Central air conditioner line. 2. Room air conditioner line. 3. Air circulator line. 4. Heater fan

(Concluded on Page 35, Col. 1)

Most Populous Areas To Be 'Above Normal'

WASHINGTON, D. C.—"Above-normal" temperatures for most of the heavily populated areas of the eastern half of the nation, with the exception of the south Atlantic coastal area, is the U. S. Weather Bureau's 30-day outlook for the month of June.

Temperatures are also expected to average above-normal along the California coast. Normal June temperatures are predicted for Texas and some of the southern and Central Plains states. Only sizable "below-normal" area is in the Rocky Mountain region.



Chicago Pact Seen Boosting Productivity

Contractors Cite Lifting Of Power Tool Curbs

CHICAGO — Plumbing and heating contractors in the Chicago area express the belief that a new labor agreement just reached will result in increased productivity and possibly lower costs on the job, despite provisions for wage increases for journeymen plumbers.

The new one-year pact lifts restrictions on use of power tools and power equipment, stating that plumbers may now use power tools in work other than making pipe fittings.

More flexible "work rules" are a part of the new contract. Under its terms, contractors will have the privilege of cutting, threading, or welding pipe either in their shops or on the job. Formerly, pipe could be cut in the shop of a contractor only by special agreement.

Also, in signing the agreement, Stephen M. Bailey, busi-

(Concluded on Page 35, Col. 1)

Conference Cites Need for Improved Heating Oil 'Specs'

By C. Dale Mericle

CLEVELAND — Performance of residential and small commercial oil burners could be greatly improved if the specifications for No. 2 fuel oil were higher and more uniformly observed.

This thinking appeared to be the dominant theme of an all-day conference on "Combustion in the Heating Industry" sponsored May 21 by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers at the ASHRAE research laboratory here.

Announced purpose of the meeting was to focus attention on research needed in the field of combustion for heating, an area that has been "greatly neglected" in the past decade.

Although the conference was devoted primarily to present-day oil burners ("there are fewer problems with gas," explained a committee member), there were two discussions of combustion processes that might become increasingly important in the future: catalytic-surface combustion, and fuel cells that produce electricity directly from combustion of fossil fuels instead of using the intermediate steam turbine-generator stage.

Conflicting theories and past

(Concluded on Page 31, Col. 2)

Acme Opens Factory Office on Coast

JACKSON, Mich. — Opening of a direct factory sales office in San Francisco has been announced by Acme Industries, Inc.

The new office, located at 1485 Bayshore Blvd., San Francisco 24, will facilitate the processing of greatly accelerated sales in the area, the company said. The office will supervise sales engineering activities in a 10-state area which includes Washington, Oregon, Colorado, Nevada, Arizona, Utah, Idaho, New Mexico, Montana, and California.

"The San Francisco office will also provide close personal contact with expanding field activities in this important 10-state market for Acme products," the announcement stated.

"Additional direct factory sales offices are planned by Acme to provide effective distribution in the company's expanding national market."

General Controls Names Richard W. TerBush

GLENDALE, Calif.—Richard W. TerBush has been added to the General Controls Co. advertising sales promotion department as assistant manager, the firm announced.

TerBush formerly served as an advertising and sales promotion executive for several west coast and midwestern firms.

TerBush's duties will include assistance in developing and supervising sales promotion activities for the entire company.

Nutter Heads Marketing for Holly-General

PASADENA, Calif.—Lee D. Nutter has been named vice president in charge of marketing for the Holly-General Co., a division of The Siegler Corp., according to Robert K. Miller, president of the Pasadena-based firm.

L. D. Nutter

Prior to joining Holly-General, Nutter had been associated for 22 years with General Electric Co. in a variety of executive sales positions. His last position was manager of builder sales for G-E's air conditioning department.

Manufacturers' Compressor Shipments Total 1,079,326 for First 2 Months

WASHINGTON, D. C.—Manufacturers' shipments of compressor bodies in the first two months of 1959 totaled 1,079,326 units, Air-Conditioning & Refrigeration Institute reported recently.

The February total was 560,571 units, compared with 518,755 in January.

Since compressor bodies designed for use in household refrigerators are being included in 1959 for the first time, there are no comparable figures for the similar 1958 two-month period, when manufacturers' shipments totaled 644,054 units, but did not include those for use in household refrigerators.

The figures are based on reports of manufacturers whose output is estimated to be in excess of 90% of U.S. production of compressor bodies.

Breakdown of shipments by size categories, and names of reporting companies, follow:

MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES

(Including units for household refrigerators)

*Horsepower	Feb., 1959	Jan.-Feb., 1959
⅛ & under	101,363	200,843
⅙	..	..
⅕	55,362	109,127
¼	117,995	226,000
⅓	22,628	41,299
½	12,108	20,308
¾	7,097	12,875
1	110,599	206,396
1½	26,442	55,488
2	31,776	66,746
3	11,031	20,956
5	8,296	15,561
7½	3,599	6,806
10	1,148	2,385
15	528	912
20	133	259
25	143	330
30	89	224
40	108	268
50	81	169
60	61	134
75	31	77
100 & over	16	51
Total	**510,634**	**987,214**
For Automotive Air Conditioning—Total	49,795	91,839
For Ammonia Refrigerant—Total	142	272
Grand Total	**560,571**	**1,079,326**

Unless otherwise noted, this summary includes compressor bodies shipped by the reporting companies **regardless** of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a self-contained air conditioner, display case, freezer, household refrigerator or commercial refrigerator). Reporting companies were specifically asked to include export shipments, units for household refrigerators, and replacement units that are not in warranty.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

NOTES: In order to avoid disclosing the figures of individual companies, some data for two or more sizes are combined on ARI summaries.

Due to the inclusion of units for household refrigerators for the first time starting in 1959, comparable figures for 1959 are not available.

Reporting companies: Airtemp Div.; Bendix-Westinghouse; Brunner Div.; Carrier Corp.; Copeland Refrigeration; Curtis Mfg. Co.; Frick Co.; †Frigidaire Div.; ‡General Electric Co.; Gibson Refrigerator Co.; Kelvinator Div.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co.; Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Div.

*For all refrigerants **except** ammonia (excluding units for automotive air conditioning).

†Report includes units for automotive air conditioning only.

‡Report includes units for unitary air conditioning only.

Admiral Consolidates Washington Branch With Newark Office

CHICAGO — Admiral Corp. announced that the Washington, D. C. branch has been consolidated with the Metropolitan Div., headquarters of which are in Newark, N. J.

A new building has been constructed at 2916 V St., N.E., in Washington, D. C. to house complete facilities for Admiral distribution in the Capital area, including showroom, warehouse, parts, service, and general offices.

KRAMER UNICON

WAY OUT IN FRONT and deservedly so!

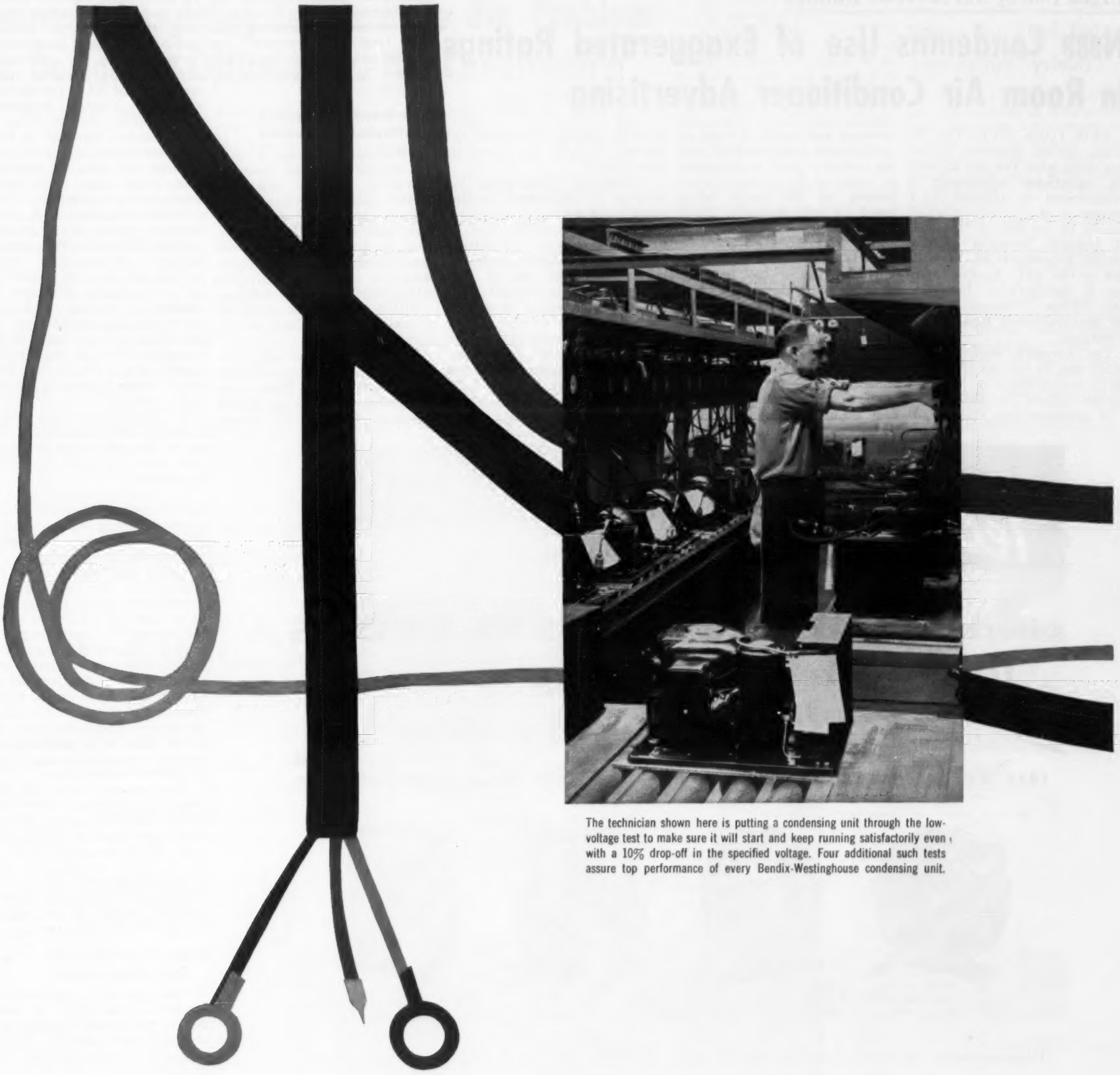
KRAMER's largest UNICON has *50% more* capacity than any other! ▶ New, all aluminum casing ends rust and corrosion. Stands and structural steel are galvanized after fabrication. ▶Time-tested WINTERSTATS prevent low receiver pressure and insure start-up under any weather condition.

Available with horizontal or vertical air flow. Lowest silhouette. ▶ Kramer's UNICON is so quiet it can be used in unlimited multiples. ▶ No one can match Kramer's 20 years of accumulated know-how in air-cooled condensing and no other air-cooled condenser can match the Kramer UNICON—the pioneering leader in the industry.

WRITE FOR BULLETIN

KRAMER TRENTON CO./Trenton 5, N. J.

46 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER



The technician shown here is putting a condensing unit through the low-voltage test to make sure it will start and keep running satisfactorily even with a 10% drop-off in the specified voltage. Four additional such tests assure top performance of every Bendix-Westinghouse condensing unit.

WHY BENDIX-WESTINGHOUSE JOB-TAILORED TESTING CUTS LINE REJECTS AS MUCH AS 75%

Exclusive Bendix-Westinghouse test program licks line reject problem on condensing units

There are two ways to test a commercial refrigeration compressor or condensing unit before shipping it to a customer.

One is to plug it in until it "turns over". Time required: *a few seconds.* Information gained about the product's "performability": *practically none.*

The other way—the Bendix-Westinghouse way—is to run the units for sustained periods of time under simulated operating conditions, checking all phases of their operation. During our exclusive five-point test program we check suction pressure and head pressure, low-voltage operation, performance efficiency and other important operating factors. If there is sub-par performance anywhere along the line, that unit isn't shipped. Time required: *at least 30 minutes each.* "Performability" information gained: *plenty!*

Because *only Bendix-Westinghouse* takes the time and trouble to provide the "product insurance" offered by the second method, Bendix-Westinghouse compressors and condensing units have by far the best record in cutting line rejects—by 75% in some instances. Recently, a freezer manufacturer told us he felt our thorough testing program had enabled him to practically eliminate his long-time problem with rejects.

We think this kind of product dependability is well worth the extra trouble—and expense to us—that this exclusive "run-in" testing requires. Your order will enable us to prove it to your satisfaction, too.

Bendix-Westinghouse

EVANSVILLE, INDIANA

A division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio.
Export Sales: Bendix International, 205 E. 42nd Street, New York 17, New York.

Urges Use of ARI or NEMA Ratings

NBBB Condemns Use of Exaggerated Ratings In Room Air Conditioner Advertising

NEW YORK CITY—The National Better Business Bureau has condemned the use in room air conditioner advertising of exaggerated or inflated B.t.u. ratings or of any ratings which cannot be justified on the basis of industry accepted uniform rating procedures as exemplified in the ARI (Air-Conditioning & Refrigeration Institute) and NEMA (National Electrical Manufacturers Association) standards.

The bureau's statement of policy and its reasons for adopting it are spelled out in NBBB service bulletin No. 1664.

In recommending that in advertising and rating of room air conditioners statements of cooling capacity shall be expressed in terms of B.t.u. capacity according to the unit's rating based on ARI standard 110-58 or NEMA standard CN 1-1958, NBBB said.

"It is really unnecessary that consumers know the technical meaning of the term B.t.u. As a result of extensive advertising by manufacturers and dealers and the concerted educational efforts of Better Business Bureaus and trade groups over the past several years, the buying public has been taught to recognize B.t.u. ratings as a yardstick by which to measure the cooling capacity of room air conditioners.

"There are fundamental objections to expressing cooling capacity of room air conditioners by other methods such as 'ton,' 'horsepower,' or ratings based on unorthodox test procedures and the use of such methods has the capacity and tendency to confuse or deceive the public."

NBBB recommended that use of the word "ton" be avoided in advertising unless the word accurately expresses the B.t.u. rating of the unit so described, i.e. at least 12,000 B.t.u. per claimed ton under standard rating conditions.

It further recommended that the term "horsepower" be avoided altogether as being very inexact in indicating cooling capacity.

Non-Standard Ratings Attacked by Bureau

NBBB attacked what it called non-standard ratings, such as maximum, 24-hour, and compressor ratings, as having the capacity and tendency to confuse and mislead the public. This is true especially when units rated under these conditions are compared with units rated under standard conditions.

NBBB specified its objections to non-standard ratings as follows:

"If a unit is tested under conditions of temperature and humidity higher than those specified under the ARI or NEMA standards, the test will indicate a higher B.t.u. capacity for the unit under these special conditions than would be obtained under the standard conditions.

"Some room air conditioner advertising has included representations of B.t.u. ratings thus artificially inflated, designated as 'maximum' ratings. They do not provide a fair and accurate basis for comparing the cooling capacity of units so described with other units rated under standard test conditions.

"Some units have been advertised as having 'B.t.u. 24-hour' ratings rather than the standard 'B.t.u.h.' 'Twenty-four hour' ratings are sometimes used by air conditioning engineers in calculating cooling load estimates for air conditioning installations and are based on the operation of an air conditioning system over a twenty-four hour period under continuous thermostatic control.

"A 'twenty-four hour' rating is simply 130% the B.t.u.h. rating of the unit, tested in accordance with the ARI or NEMA Standards.

"It would be equally valid to add the same 30% to the B.t.u.h. standard rating of the units of any manufacturer to obtain 'twenty-four hour' ratings.

"Since the public does not understand the meaning of 'twenty-four' hour' ratings they do not provide a fair and accurate basis for comparing the cooling capacity of units so described with other units rated under standard test conditions. There has been some representation of B.t.u. ratings based on another ASRE Standard, No. 23-49. This is a standard for testing compressors—not complete room conditioners.

"One manufacturer has published specifications sheets and other literature giving B.t.u.h. rated capacities, in conformance with ASRE Standard 23-49, of the 'hermetic compressor' used as a component in his various 1959 models, but the material does not contain B.t.u.h. ratings for the complete units.

Compressor Capacity Only One Factor

"The capacity of the compressor is only one factor in determining the cooling capacity of a complete unit and the B.t.u.h. rating of a complete unit may be substantially less than that of the compressor which is only one part of it.

"Illustrative of this point is the following tabulation in which the manufacturer's B.t.u.h. compressor ratings for certain models are given in the left-hand column and the ratings for the corresponding complete units under the NEMA standard, as published separately, are given in the right-hand column:

Rated Capacity In B.t.u.h.	
Compressor	Complete Unit
11,500	9,700
14,000	10,700
12,150	11,500
8,000	8,000
11,500	10,000
14,000	11,000
14,000	13,000
17,400	14,500
22,000	16,000

"The public does not understand the significance of ASRE Standard 23-49 and may misinterpret ratings so determined as applying to the complete units."

Unquestionably the most complete line of air conditioning compressors in the industry. Tecumseh product development offers new pancakes with major price savings, compactness, top capacity and greater flexibility in the design of machine compartments. Your choice from among these 23 basic compressors should pinpoint your specific job requirements.

The Model AR26 Pancake is the answer for a low cost, small size, lightweight compressor for Portable air conditioners.

The new AU Pancake Series expands this popular shell design to a line of 1 HP compressors including 7½ and 12 amp models. Two 1 HP single cylinder compressors are offered which can also be used for heat pump applications.

A complete line of twin cylinder models starting at 1 HP includes a 7½ and a 12 amp model, and the biggest capacity Twin on the market.

Within these models, variations in mounting parts, tubes, electrical characteristics, etc. are available. Whatever your requirements may be, the Tecumseh line of Air Conditioning Compressors will meet them and serve you better in every application. Investigate today.

TECUMSEH

The Leader Serving Leaders in the Air Conditioning and Refrigeration Industries

TECUMSEH PRODUCTS COMPANY

MARION, OHIO — TECUMSEH, MICHIGAN

EXPORT DEPT: P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan
CANADA: Tecumseh Products of Canada Limited, 1667 Dundas St., London, Ontario.

Increased Lighting Levels Pose Big Problem In Designing Office Bldg. Air Conditioning

By C. Dale Mericle

CLEVELAND—Higher levels of illumination will increase air conditioning loads but not necessarily in direct proportion, Edward J. Benesch declared at a recent conference on building illumination held here by the Building Research Institute.

The possibility that lighting loads will be raised should be considered and allowed for in designing present air conditioning systems, particularly for large office buildings, also suggested Benesch, chief engineer of Syska & Hennessy, Inc., New York engineering firm.

Considering a hypothetical 20-story office building with 35% glass area, Benesch calculated that the air conditioning load of 845 tons for 50 f.c. (foot-candle) lighting intensity would jump to 1,385 tons for 200 f.c. This means an increase of 66% in plant tonnage compared with a 400% increase in nominal lighting.

For a similar building with 60% glass area, the 950 tons required for 50 f.c. would increase to 1,500 tons for 200 f.c., or an increase of 58% in tonnage for a 400% jump in lighting. Coping with these increased tonnages, however, probably cannot be done by conventional means, Benesch indicated.

Increasing the conditioned air supply above 20 changes per hour and/or operating at temperature differentials greater than 20° F. would probably lead to difficulties, he explained. Excessive air movement on the one hand, condensation on the other could result.

"Jobs have been done and are being done with air changes higher than 20 per hour and temperature differentials up to 30°; however, they require extreme care during design, installation, and operation," he said.

"Briefly: We are handling too much supply air. Too much air means large ducts. We need not dwell on what large ducts mean to over-all building economies."

Obvious solution, he said, is to take care of the lighting load at the source.

In other words, heat that is produced by the lighting should be removed before it enters the conditioned space. This has been done by means of panel cooling, which requires a suspended metal pan acoustic ceiling, he explained, used in conjunction with conventional air cooling.

Benesch concluded with this suggestion:

"At present design for, say, 50 f.c., but make provision for increasing the lighting levels in the future.

Electrically speaking, such provision does not appear to present too serious a problem except money-wise. Serious consideration must be given to the initial selection of the type of air conditioning system so that required provisions may be incorporated in the original design."

Cool Oldsters

Homes for Aged Get Year-Round Systems

LOS ANGELES — Oldsters, too, are included in the current-day trend to year-round air conditioning of almost every conceivable type of facility, a report from air conditioning manufacturer Drayer-Hanson here indicates.

Sales Manager Irvin Secord points to two new projects under way which will furnish infor scores of old timers, come this summer's heat.

The St. James House for Aged, Houston, is to be equipped with Drayer's low-headroom units, some 70 in number.

In Phoenix, the Sacred Heart Home for the Aged will utilize 82 room-by-room units, and 11 public-space area types. Latter is new 2½ million dollar facility.

THIS
$75,000 CALIFORNIA HOME
CALLED FOR A DUCT SYSTEM
OF THE HIGHEST

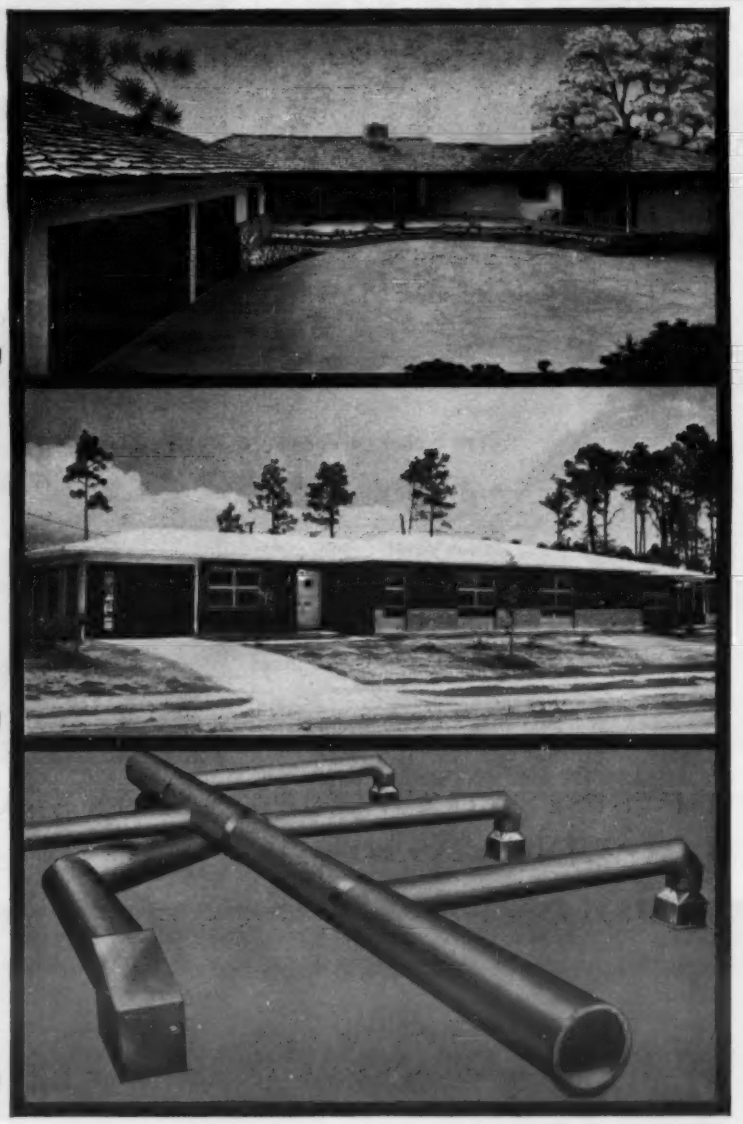
quality..

AND IN THIS
800-UNIT CAPEHART HOUSING
PROJECT, EMPHASIS WAS ON

economy..

IN BOTH CASES
CONTRACTORS INSTALLED

G-B Duct..



If you're interested in satisfying both price- and quality-conscious customers, next time specify G-B Duct—the first and only prefabricated round glass fiber duct tested and labeled by Underwriters' Laboratories as an air conditioning and heating duct.

With G-B Duct you get quality performance because the uniformly thick glass fiber walls provide thermal insulation and maximum sound absorption. Also, the continuous airtight plastic vapor barrier sleeve positively prevents condensation.

And installing G-B Duct is economical, too, because with G-B Duct you get a neater, better job—faster. G-B Duct comes in one-piece 6′ sections, ready to use—no preassembly, no folding. It's easy to cut and fit with a knife and the templates are provided. Sizing is no problem because G-B Duct is made in the same nominal sizes as round sheet metal pipe and fittings.

FOR NAME OF YOUR NEAREST SUPPLIER, SEE ADJOINING COLUMN

GUSTIN-BACON Manufacturing Company
218 W. 10TH ST., KANSAS CITY, MO.

Thermal and acoustical glass fiber insulations • Molded glass fiber pipe insulation • Couplings and fittings for plain and grooved end pipe

G-B DUCT DISTRIBUTORS

AKRON, Ohio, The Asbestos Supply Co.
ALBANY, Ga., Industry Insulation Co.
ALBANY, N. Y., Hudson Valley Asbestos Corp.
ALBUQUERQUE, Mt. States Insulation Co.
AMARILLO, Morrison Supply Co.
ATLANTA, Ga., Reynolds Aluminum Supply Co.
The Thompson Company
AUGUSTA, Ga., Noland Company
BALTIMORE, Md., Leroy Insulation Company
BEAUMONT, Tex., Solar Supply Company
BILLINGS, Mont., Big Horn Supply, Inc.
BIRMINGHAM, Ala., Hall-Newsome Co.
Hart-Greer, Inc.
Shook & Fletcher Supply Co.
Reynolds Aluminum Supply Co.
BOSTON, Mass., Homans-Kohler, Inc.
BUFFALO, Industrial Insulation Sales, Inc.
North Star Supply Company
CHARLESTON, W. Va., Dunbar Metal & Sup. Co., Inc.
CHATTANOOGA, Noland Co.
CHICAGO, E. C. Carlson Company
Culberg Asbestos & Cork Co.
CLEVELAND, Ohio Asbestos & Ins. Co.
COLUMBUS, Santeler Brothers
Culberg of Ohio
CORPUS CHRISTI, Precision Insulation Co.
DALLAS, Insulation Supply Co.
Payne-Ladewig, Inc.
DAVENPORT, Iowa, Republic Electric Co.
DECATUR, Ga., Lennox Industries
DENVER, Gene Wright Lumber Co.
DES MOINES, Iowa Asbestos Company, Inc.
DETROIT, G. L. Johnston Co.
ENGLEWOOD, N. J., Englewood Supply Co.
EVANSVILLE, Ind., George Koch Sons, Inc.
FT. WAYNE, Ind., M. H. Hilt, Inc.
FT. WORTH, Bracken Co.
GULFPORT, Miss., Paine Supply Co.
HOUSTON, Precision Insulation Co.
INDIANAPOLIS, Central Supply Co.
JACKSON, Miss., Paine Refrigeration & Supply Co.
JACKSONVILLE, Ferber Sheet Metal Works
Florida Air Conditioners
Reynolds Aluminum Supply Co.
Southernair Distributors
KANSAS CITY, Mo., Central Supply Co.
Superior Distributing Corp.
KEWANEE, Ill., Mechanical Insulation Co.
KNOXVILLE, Tenn., Holston Air Conditioning Corp.
LAKE CHARLES, La., Solar Supply Company
LAREDO, Tex., Anderson-Sturgis Company
LITTLE ROCK, Gunn Distributing Co.
LOS ANGELES, Western Fibrous Glass Products Co.
LOUISVILLE, General Insulation & Roofing Co.
LUBBOCK, Tex., Morrison Supply Co.
MACON, Ga., Industry Insulation Co.
MEMPHIS, A. T. Distributors, Inc.
MIAMI, Crabtree Insulation Co.
Fiber Duct Dist.
Reynolds Aluminum Supply Co.
MILWAUKEE, F. R. Dengel Co.
MINNEAPOLIS, Asbestos Products, Inc.
MYRTLE BEACH, S. C., Air Conditioning Supply
NASHVILLE, Central Air Conditioning & Heating Co.
Reynolds Aluminum Supply Co.
NEWARK, N. J., Eastern Steam Specialty Co.
NEW ORLEANS, Eagle Asbestos & Packing Co.
Solar Supply Co.
NEW YORK, Eastern Steam Specialty Co.
NORFOLK, Va., Automatic Equipment Sales Co.
OKLAHOMA CITY, Ball Dist. & Engineering Co.
OMAHA, Cardinal Supply & Mfg. Co.
ODESSA, Tex., Morrison Supply Co.
ORANGE, Conn., Insulation Supply Co.
PASSAIC, N. J., Ral Supply Co.
PHILADELPHIA, John F. Scanlan, Inc.
PHOENIX, Kircher Asbestos & Rubber Co.
PITTSBURGH, Dravo Corp.
RALEIGH, N. C., Reynolds Aluminum Supply Co.
RICHMOND, Va., Automatic Equip. Sales Co., Inc.
Reynolds Aluminum Supply Co.
ROCHESTER, N. Y., Rochester Oil Burner Company
ROCKFORD, Ill., Mott Brothers Co.
SALT LAKE CITY, Bullough Asbestos Supply Co.
SAN ANTONIO, The Bracken Company
SAN DIEGO, Western Fibrous Glass Products Co.
SAN FRANCISCO, Western Fibrous Glass Products Co.
SAVANNAH, Ga., Reynolds Aluminum Supply Co.
SEATTLE, Western Fibrous Glass Products
SHREVEPORT, La., Frith Sales Co.
SOUTH BEND, Place & Co.
ST. LOUIS, Hollander & Co., Inc.
ST. PAUL, Minn., Asbestos Products, Inc.
SULLIVAN, Ill., Lewie David, Inc.
SYRACUSE, N. Y., Burnett Process, Inc.
TALLAHASSEE, Baker's, Inc.
TAMPA, Eagle Roofing & Art Metal Works, Inc.
TULSA, Okla., Ball Distributing & Engr. Co.
VANCOUVER, B. C., Fleck Brothers Limited
WASHINGTON, D. C., Walter E. Campbell Co.
WINSTON-SALEM, N. C., Air Conditioning Supply

THE G-E MOTOR STORY: SERVICE +

YOU GET FAST SAMPLE SERVICE

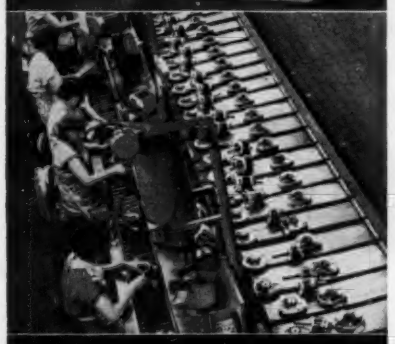
EXPERT APPLICATION ENGINEERING

AND PROMPT DELIVERY

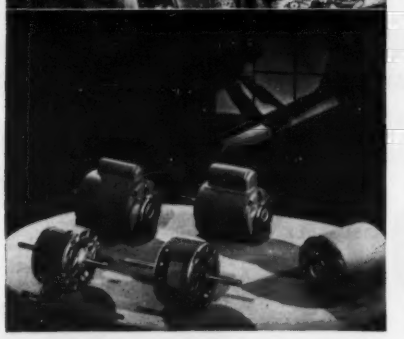
ON A COMPLETE LINE OF PROVED FHP MOTORS

G-E ENGINEERS will help you tailor a Form G motor to meet your performance requirements . . . and provide the fast sample service you need to finalize the design and tooling of new models.

APPLICATION HELP from G-E engineers—specialists in air-conditioning motors—assures you of the best motor for your product commensurate with your specific performance requirements.



GENERAL ELECTRIC'S manufacturing capacity and multi-plant flexibility are geared for fast deliveries of volume orders. This assures you of constant availability of the motors you need.

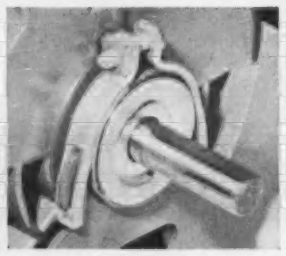


THE RIGHT MOTOR is available from General Electric now. The motors at left are typical of the complete line of years ahead G-E motors designed specifically for your air-conditioning requirements.

WITH THESE EXTRA-VALUE FEATURES THAT CUT INSTALLATION . . . INVENTORY . . . SERVICE COSTS

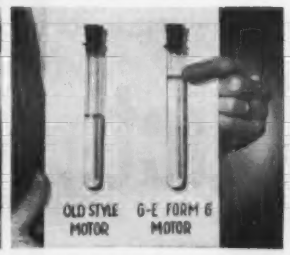
QUICK CONNECT TERMINALS make wiring Form G motors easy and quick. Enlarged opening also saves hook-up time.

PLUG-IN TERMINALS on outside of G-E Type KSP and KCP 39-diameter motors permit fast, easy connection of motor leads.

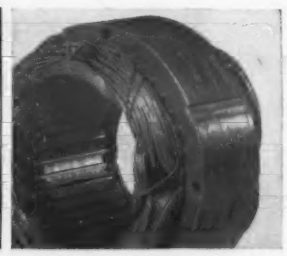


NEW! PROTECTIVE FINISH. Special shaft treatment minimizes corrosion, thus simplifying removal of fans, pulleys and couplings.

NEW! QUIET, SURE SWITCH. Special washer cushions switch click, maintains positive snap action under heaviest demands.



LONG LUBRICATION LIFE. Large oil supply and superb retention system cut maintenance—eliminates reoiling in many cases.



LONG-LIFE STATOR—Mylar* polyester film, Formex† wire, heavy-duty bonding dip resists heat, moisture, and electrical stresses.

These General Electric Form G motor benefits will help keep your new design program on schedule, and improve your product as well. If you'd like help on a specific problem contact your nearby General Electric Apparatus Sales Office. For more information on Form G motors write for bulletins GEA-6424 and GEA-6533, to General Electric Company, Section 702-98, Schenectady 5, New York.

* Reg. trademark, DuPont Co.

† Reg. trademark, General Electric Co.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Lansing Silver Shield Program Kick-Off Set for June 14-20

LANSING, Mich—As part of the nationwide campaign to upgrade and improve the heating and cooling systems in houses, the Silver Shield Program is coming to Lansing. The local Indoor Comfort Bureau is planning its kick-off week to be held from June 14 to June 20.

Since the first week in March, heating and cooling dealer-contractors have been meeting, into the wee hours of the morning, to organize the Lansing Indoor Comfort Bureau, the forerunner to Silver Shield installations.

Silver Shield is the name given to a duct warm air heating system that meets national standards and is backed up by a guarantee.

During the past three months a training school using the manuals of the National Warm Air Heating & Air Conditioning Association, the sponsoring group, has been held weekly to acquaint nearly 38 local dealers in the proper way to install warm air heating and ducted air conditioning equipment.

Now the local group is preparing for the June 14-20 kick-off week. During "Silver Shield" week, numerous events are being planned to tie-in with the city's Centennial celebration.

According to Roland Lewis, president of the Lansing Indoor Comfort Bureau, the main event of the week's activity revolves around the first annual dinner meeting to be held on Tuesday evening, June 16, at Kellogg Center.

Over 300 people, from the greater Lansing area, plus representatives of manufacturers of heating and cooling equipment, will be in attendance. Invitations for this unusual event are now being sent to the greater Lansing bankers, builders, real estate organizations, architects, city officials, and contractors.

During the dinner meeting, the official license to operate an Indoor Comfort Bureau and sell Silver Shield Systems will be presented to Tom Byrd, president of NWAHACA. Byrd is president of Lau Blower Co.

Also in attendance will be members of the executive staff of NWAHACA.

Members of the Lansing Indoor Comfort Bureau are:

Titus The Tinner; Gross Plumbing and Heating; Cedarway Htg. & A/C; Porter Htg. & Air Conditioning; Hendee Plumbing & Heating (Grand Ledge); Sloane Ht. & Air Conditioning; Wayne Jackson Htg. & A/C; Central Michigan Heating (Mason); Lewis Heating Co.; Lawrence M. Fish Plumbing & Htg. (St. Johns).

From New York will be editorial representatives of some of the nation's leading consumer and shelter magazines who are closely following the growth and spread of the Silver Shield Program, it was noted.

The dinner meeting at the Kellogg Center has been in the planning stage for over two months. Every business firm, dealer, contractor, or individual concerned with the servicing, modernization, or installation of ducted air heating or cooling systems was invited to attend.

For over 10 months, a trial of the program has been going on in Kalamazoo, Mich.

According to George Boeddener, managing director of NWAHACA, "Public acceptance has been gratifying. Families, freed from the chills, cold floors, dry air, and high fuel bills of old-fashioned sub-quality systems, have given testimonial to the advantages of their new Silver Shield installations."

Nelson Describes Silver Shield To Colorado Springs Contractors

COLORADO SPRINGS, Colo.—The Silver Shield program was described by Randall Nelson, director of public relations of the National Warm Air Heating & Air Conditioning Association, in a talk at the Broadmoor hotel here during the annual convention of the Sheet Metal & Air Conditioning Contractors' National Association, Inc.

Nelson explained operation of the dynamic plan to encourage dealer-contractors to "learn to work together for the sake of their own business success, for the sake of all the industry, and for the sake of the American consumer who wants a quality product."

"This is a united program that came from the industry," Nelson declared. "Silver Shield is the distillation and amalgamation of the best ideas and experiences that reputable dealer-contractors have formulated during the past 50 years."

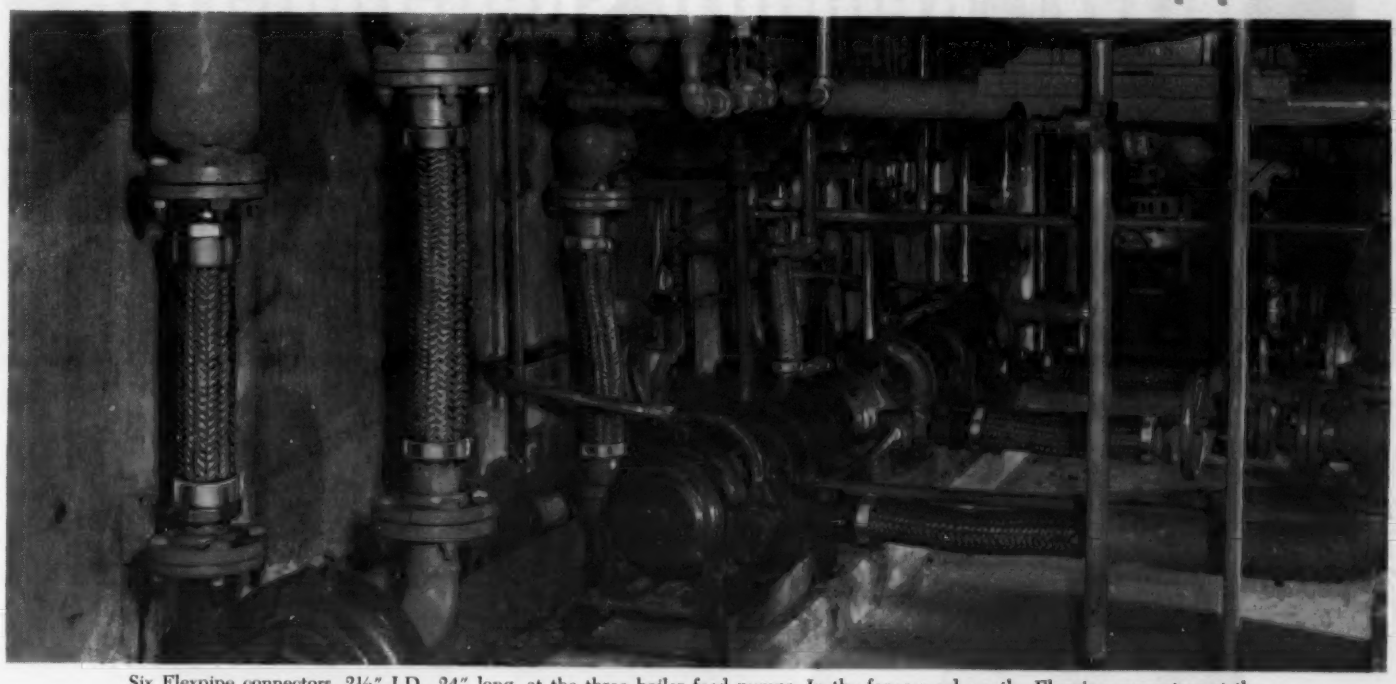
Nelson described how Indoor Comfort Bureaus are established in communities through the desire of local dealers. These bureaus are local organizations established to insure proper review, inspection, and promotion of Silver Shield Systems.

"They are organized as a completely separate entity for the specific purpose of operating the local Silver Shield Programs and promoting the Silver Shield quality heating/air conditioning systems," Nelson said. "They are not designed, nor intended, to supplement, override, substitute for, or eliminate any other local group."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

APPLICATION HINTS:

Ways to simplify construction and cut costs with Flexpipe



Six Flexpipe connectors, 2½" I.D., 24" long, at the three boiler feed pumps. In the foreground are the Flexpipe connectors at the hot water pump feeding Weathermaster units throughout the Administration Building of the Illinois State Toll Highway Commission.

Flexpipes made this heating and cooling system more compact, cut installation time

Artist's rendering of the Administration Building, Illinois Toll Highway Commission. Lankton, Ziegele, Terry & Associates: Architects and Construction Engineers.

Heating and cooling systems can utilize all the advantages offered by Flexpipe connectors. Flexpipes take up movement caused by expansion and contraction in piping from wide variations in temperature. At the same time, they absorb vibration and dampen noise from pumps.

They make possible better utilization of space because they are easier to install in tight quarters and can handle offset. Note in photo above how vertical Flexpipes from boiler feed pumps saved space by making possible easy connections to piping flush against wall. Conventional piping would require considerably more work room—plus the time and cost of installing elbows, couplings, short runs of pipe, etc.

Flexpipe's flexible core can be either bronze, galvanized steel or stainless steel—I.D.'s range from ¼" through 16".

WHERE TO BUY: Leading wholesaler distributors can provide you with information about Flexpipe in standard sizes. For the name and address of the distributor serving your area, or for more detailed information, write to: Anaconda Metal Hose Division, The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

Two 8" I.D. Flexpipe connectors handle cooling water for refrigeration unit.

Flexpipe®

an

ANACONDA®

product

Defendants Ask Dismissal of Cory Suit

CHICAGO — Answering a complaint filed against them by Cory Corp., Bernard A. Mitchell and other former stockholders of Mitchell Mfg. Co. denied allegations and asked that the suit be dismissed.

Cory charged misrepresentation and concealment of assets and liabilities at the date it purchased all outstanding capital stock of Mitchell Mfg.

Defendants' answer, filed in Superior Court, claims that the statement issued to Cory by Mitchell Mfg. in no way misrepresented the truth as to excise tax liability.

Insofar as the complaint attempts to charge a cause of action in equity, it fails to state a claim on which relief can be granted, the defendants claim.

Trial is scheduled to start at 11 a. m. on June 8 before Judge John A. Sbarbaro.

Hagan Will Build Quarter Million Dollar Addition

PITTSBURGH — Hagan Chemicals & Controls, Inc. will build a new one-story quarter million dollar addition to existing research facilities at the firm's 27-acre headquarters site near Pittsburgh, President W. W. Hopwood announced.

Scheduled for completion in early fall, the new structure will provide more than 25,000 sq. ft. of additional floor space for both controls and chemical product research and development laboratories, it is pointed out by the firm.

Albert Fogel Gains Control of Clover

PHILADELPHIA—The outstanding stock of Clover Refrigerator Co., Inc. was purchased by Albert Fogel, president of Howard Refrigerator Co., Inc., it was announced recently.

This purchase, when combined with his present holding, gives Fogel full control of Clover, the announcement said.

Clover Refrigerator Co. engineered, designed, and manufactured industrial, commercial, and specialty refrigeration equipment.

Howard will provide the manufacturing know-how for quantity production of these items, it was indicated.

All manufacturing and merchandising operations are to be consolidated with the Howard factories.

Copeland Reaches Normal Production Following Strike

SIDNEY, Ohio—The 23-day strike at Copeland Refrigeration Corp. ended Thursday, May 28, when 1,150 production employes ratified a firm, non-reopenable two-year contract.

Production reached normal levels by June 1, according to Copeland President Frank J. Gleason, who stated, "We are taking every feasible means, including stepped-up production schedules, to immediately increase shipments. We expect to meet our customers' requirements throughout the summer months."

Through this year, Copeland has experienced a substantial volume increase over 1958, management said. This reflects greater activity throughout the refrigeration and air conditioning industry. Preliminary marketing studies indicate that 1959 will be followed by at least two years of steadily increasing industry volume, it was stated.

Warren Webster

(Concluded from page 1)

A. Wagner, president of Management & Development Corp., will be active in Warren Webster & Co. management and that he, himself, would continue to serve the company in an active capacity.

He said that he foresaw very few changes in company operations or marketing policy, and that the name Warren Webster & Co. would be retained by the new owners.

It was explained that Management & Development Corp. has been successfully engaged in industrial financing and management for a number of years. The company's plan is to concentrate on the expansion of Warren Webster & Co.'s facilities and product line.

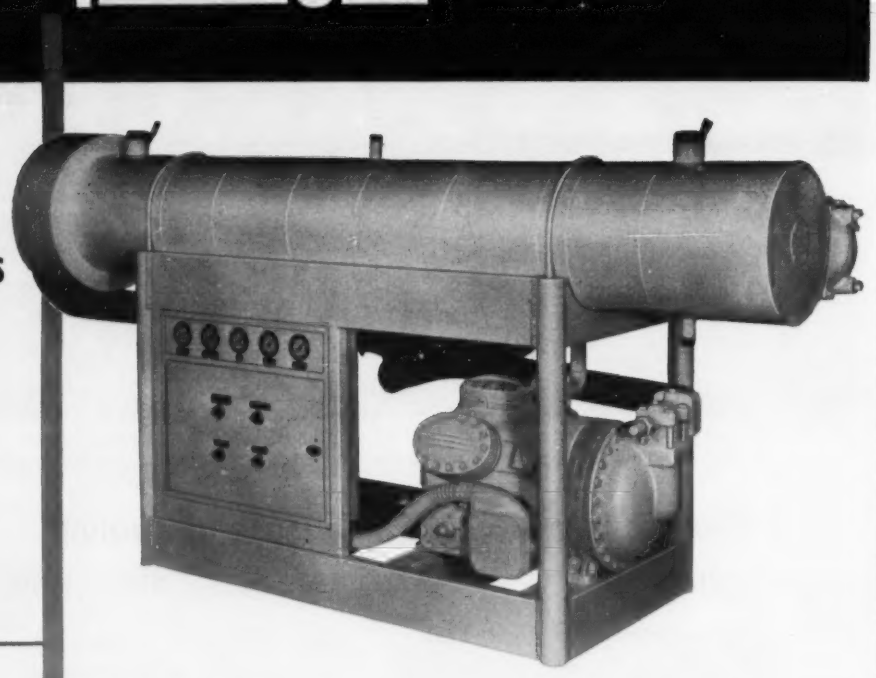
Webster stated that directors of the company would be Herbert A. Wagner; Roland R. MacKenzie, president, Southeast Airmotive Corp. of Charlotte, N. C.; A. Richard Webster, who will be vice president in charge of operations of the new company; James McHenry, partner in the Baltimore brokerage firm of Alex. Brown & Sons; Richard E. McConnell, formerly secretary-treasurer of Virginia-Caroline Chemical Co., who will serve as secretary-treasurer of the new company; J. Nicholas Shriver, Jr. of Cross and Shriver, Baltimore attorneys; and A. Lee Loomis of New York City.

Following the stockholders' meeting, A. Richard Webster stated that sales volume of the company is at record levels, and that the addition of new management skills and broadening the base of ownership would make it possible to accelerate the company's growth plans.

Rootes Offers Coolers For Imported Cars

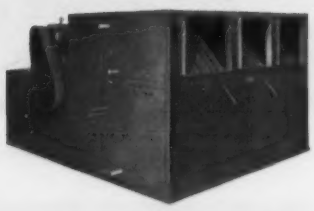
CHICAGO—Announcing that it was making custom air conditioning units available, Rootes, imported car company, said it will offer the air conditioner through the more than 700 dealers handling Hillman and Sunbeam Rapier cars. The air conditioner is made in Texas, the announcement said.

NOW! Kennard shell-and-coil chiller forms "heart" of new packaged unit!



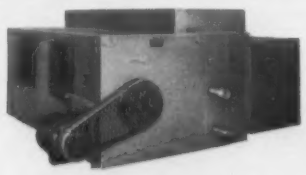
KENNARD

OTHER AIR CONDITIONING, HEATING, VENTILATING PRODUCTS



MULTIZONE AIR CONDITIONING UNITS

A single central station Kennard Multizone Unit can efficiently condition multiple zones. Cooling coils: direct expansion and chilled water. Heating Coils: steam or hot water.



AIR HANDLING UNITS

14 sizes of horizontal and vertical air conditioning units with CFM ranging from 400-36,000 CFM. Heating and ventilating units with 400-36,000 CFM capacities for steam or hot water systems.

COOLING-HEATING COILS

Controlled Kennard quality is featured in a complete line of cooling and heating coils including direct expansion, chilled water steam, (non-freeze and standard) and hot water.

The Kennard line also includes cooling towers, evaporating condensers, sprayed and finned coils for heating and cooling service.

Kennard's shell-and-coil chiller (the heart of the package) puts this Packaged Liquid Chiller in a class by itself in the 20 HP-150 HP range.

Exclusive internally-finned tubing, *built as an integral part of each tube,* overcomes costly heat transfer problems on the refrigerant side.

Compact, perfectly balanced components assure trouble-free operation.

This outstanding package requires no field assembly. After simple electrical and water connections the Kennard Packaged Liquid Chiller is ready to operate. Special built-in safety devices protect the chiller and compressor under all operating conditions.

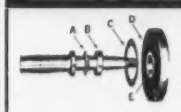
Get complete facts from your Kennard representative or for a free copy of the new Kennard Chiller Bulletin write: Engineered Air Systems Division, American Air Filter Co., Inc., 109 Central Ave., Louisville, Ky.

AAF American Air Filter

BETTER AIR IS OUR BUSINESS

Kennard is a famous brand among AAF products

REPLACEMENT VALVE PLATES & SEALS for COMMERCIAL, INDUSTRIAL & AUTOMOTIVE REFRIGERATION and AIR CONDITIONING COMPRESSORS (current & discontinued models)



Long life, high speed, easy-to-apply metal to metal faces. No carbon or other cracking materials.

The only valve plate with replaceable seats.

For the most complete line of replacement valve plates and seals See your Wholesaler, or write for bulletin # 867.

CHICAGO VALVE PLATE & SEAL COMPANY
5941 W. FULLERTON AVE.
CHICAGO 39, ILL.

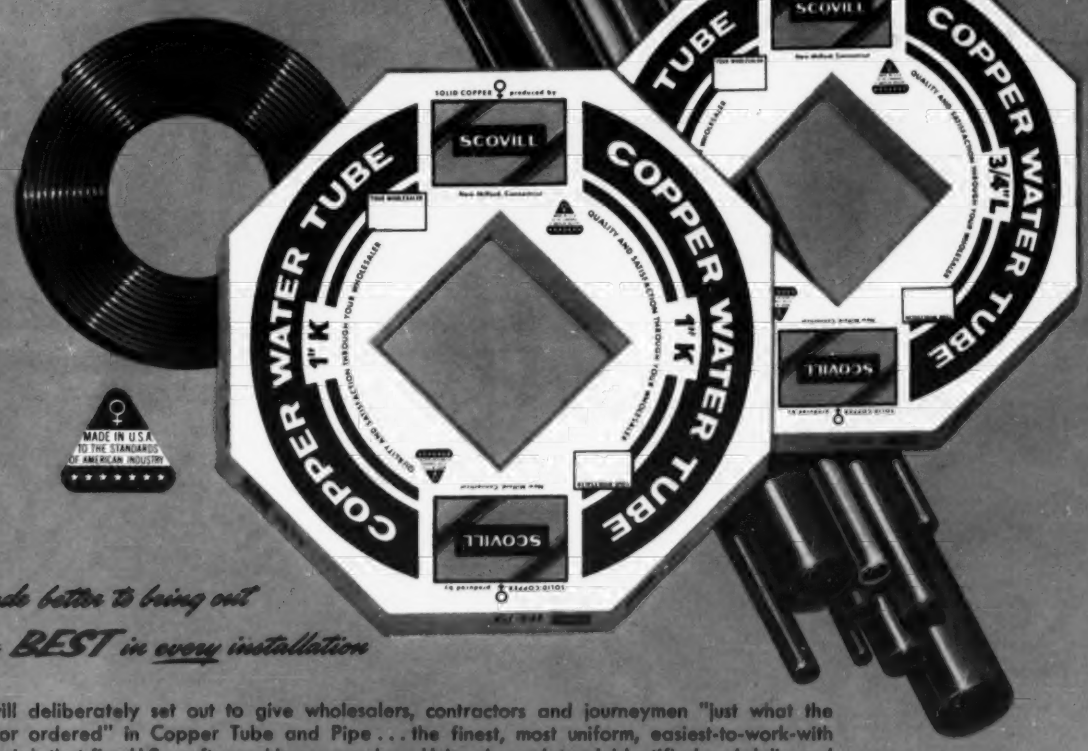
SCOVILL

a **new** standard of **quality** and **service**

under an old and respected name ®

COPPER WATER TUBE K•L•M
COPPER DRAINAGE TUBE (DWV)
COPPER THREADLESS PIPE (TP)
COPPER PIPE
RED BRASS PIPE
COPPER REFRIGERATION TUBE

COPPER WATER TUBE



made better to bring out
the BEST in every installation

Scovill deliberately set out to give wholesalers, contractors and journeymen "just what the doctor ordered" in Copper Tube and Pipe . . . the finest, most uniform, easiest-to-work-with materials that fine U.S. craftsmanship can produce. Uniquely packaged, identified and delivered on the job just the way you want them! Scovill built ALL-NEW multi-million dollar tube mills, the most advanced in the industry, for this one purpose . . . with nationwide Scovill sales and service . . . yours to command. Place an order today . . . you'll become our lifelong customer tomorrow.

SCOVILL MANUFACTURING COMPANY • COPPER TUBE MILL PRODUCTS, WATERBURY, CONN.

12BC59

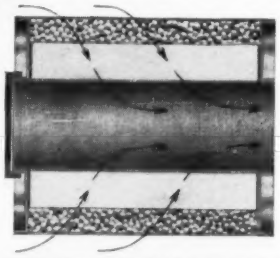
PATENT PENDING
FLOW
An efficient and high capacity multiple cartridge filter-drier with a drying and flow capacity range up to 125 tons.

Low Pressure Drop...No By-Pass Required

875-CMS DRI-COR® Filter-Drier Cartridges for these new driers are self-sealing and self-positioning. It requires only a few seconds to insert the cartridges into the drier shell, resulting in a minimum of exposure to the atmosphere and loss of cartridge drying capacity. Thus, the cartridges are clean, dry and complete—due to efficient design and split second handling.

The refrigerant flows uniformly over the total cartridge surface, through the desiccant bed and each filter core. This results in maximum moisture and acid removal with high flow capacity and low pressure drop.

These brass driers contain from two to five cartridges and are available with connection sizes ranging from 1⅛" to 2⅛" O.D. Solder.



CAT. No. 875-CMS DRI-COR® FILTER-DRIER CARTRIDGE WITH

1. OUTER PERFORATED BRASS SHELL.
2. BED OF GRANULAR MOLECULAR SIEVES.
3. CERAMIC FIRED DESICCANT FILTER CORE.
4. INNER DUTCH WEAVE MONEL SHELL.
5. PROGRESSIVE FILTRATION.
6. ONE SIZE CARTRIDGE FOR ALL TYPE 75 DRIER SHELLS.

HENRY VALVE CO.

MELROSE PARK, ILLINOIS (Chicago Suburb)

Cable: Hevalco, Melrose Park, Illinois

VALVES, DRIERS, STRAINERS AND ACCESSORIES FOR REFRIGERATION, AIR CONDITIONING AND INDUSTRIAL APPLICATIONS

HENRY VALVE CO. CONTROLLING FLOW SINCE 1914

Remington All-Electric 'Incremental' Units Provide Year-Round Conditioning

REMINGTON 'Incremental Conditioner'

* * *

AUBURN, N. Y.—An entirely new line of all-electric "Incremental Conditioners," designed to provide year-round air conditioning, has been announced by E. M. Johnson, vice president of Remington Air Conditioning Div.

According to Johnson, this equipment provides complete, permanent air conditioning, both heating and cooling, for either existing or projected multi-room buildings: apartment houses, hospital rooms; hotel and motel guest rooms; office buildings; residences and related applications.

Present users of similar Remington equipment include the Spring Branch hospital, Houston, Texas; Augusta Housing Authority, Augusta, Ga.; and the offices and apartments of the Khuzestan Development, Ahwaz, Iran, it was noted.

Cooling May Be Added at Later Date

"A special feature of this equipment (Type EK) is that, initially, it may be installed for heating only," Remington pointed out. The cooling feature can then be added later, as desired.

"The controls consist of an "On" and "Off" switch and a combined heating-cooling thermostat.

"Once the main switch is 'On' it is only necessary to adjust the thermostat to the desired temperature. The air conditioner will then either heat or cool, if either function is required to maintain the desired room temperature.

"Ventilation is provided by a high pressure centrifugal blower through an automatically controlled electrically operated damper. Whenever the air conditioner is off, the damper is closed.

Equipment Offered In 3 Cooling Capacities

"This new equipment is offered in three cooling capacities from 9,000 to 15,100 B.t.u.h. and likewise three heating capacities from 8,000 to 15,300 B.t.u.h. These cooling and heating capacities are available in any combination. All capacities are offered for either 208 or 230 volt single-phase current.

"In new buildings the operating components of these Incremental Conditioners are installed in a wall cabinet of 16 gauge zinc-coated steel which is put into place at the time of construction. In existing buildings the wall cabinet is placed in the wall after the necessary hole has been cut.

"The only connection consists of electric wires. It is not even necessary to provide a drain for the moisture removed from the air while it is being cooled and dehumidified in the summer. This condensate is re-evaporated into the outdoor condenser air in such a way as to increase the efficiency of the cooling mechanism and prevent dripping or streaking the outside walls of the building."

For Your Reprint Copy

"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer. Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

Acme Unfilled Orders In April Running 42% Ahead of Last Year

JACKSON, Mich. — Record sales and shipments of air conditioning equipment by Acme Industries, Inc. in its fiscal-year third quarter ended April 30 were reported to stockholders recently.

Unfilled orders at April 30 were 42% higher than a year ago, K. A. Weatherwax, president, stated.

For the first nine months of its fiscal year, to April 30, 1959, net sales were $6,486,330 and net earnings after estimated income taxes were $152,891 or 38 cents a common share. This compares with net sales of $5,930,608 and net earnings of $126,470 or 31 cents a common share during the corresponding period of the previous fiscal year.

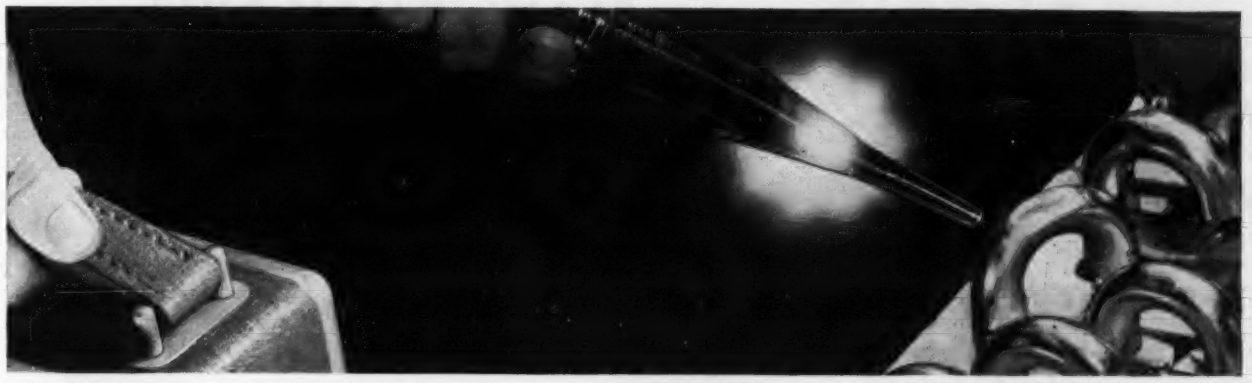
For the three months ended April 30, net sales were $2,717,191 and net earnings $124,647 or 31 cents a common share, compared with net sales of $1,743,755 and net earnings after estimated tax of $3,743 or 1 cent a common share in the corresponding 1958 quarter.

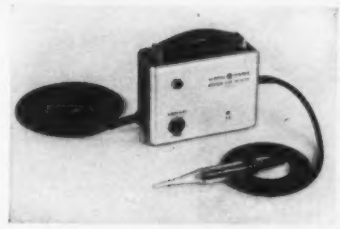
Stewart-Warner To Heat and Cool 200 Air Force Units

LEBANON, Ind. — Stewart-Warner Corp.'s Heating & Air Conditioning Div. has received an order for 200 "MY" series gas-fired furnaces and 200 companion air conditioning units for Bossier Air Force Base, Shreveport, La., the division announced.

Summer cooling units are 2 and 3-hp. capacity remote condensing units with evaporator coils and cases mounted in the furnaces, the manufacturer pointed out.

locates leaks in a flash . . .





This new General Electric Type H-6 leak detector flashes a probe light instantly when the tip pinpoints a leak. Air-conditioning and refrigeration leaks (even as small as ½ ounce per year) are detected quickly and positively in a flash! ***Eliminates costly guess work.*** As soon as the tip of the probe finds a broken seam or leaky joint, there's a reliable signal right in your hand! The H-6 has an automatic balance circuit . . . you can locate leaks even when the atmosphere is contaminated with refrigerants up to 100 ppm. Flip the switch and start probing in only 60 seconds. This sensitive unit ***responds to leaks quickly,*** recovers in a second. It's compact, lightweight, rugged, portable . . . and attractively designed. Always enjoy fast, positive, sensitive detection—at low cost—with the Type H-6. Or, for other special applications, select from General Electric's complete line of portable and stationary halogen units for pressure or vacuum leak testing. Get the full story today! Just contact your local air conditioning and refrigeration wholesaler, or write direct to Sect. 595-203, General Electric Co., Schenectady 5, N. Y.

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Progress Is Our Most Important Product

GENERAL ELECTRIC

'Animated Sales Clincher'

Home Air Conditioning Is an Investment Not an Expense, G-E Presentation Shows

DEALER WORKS with G-E 'animated sales clincher' in home of client. Looseleaf binder includes gatefolds and slide charts which emphasize benefits of air conditioning and importance of proper installation.

TYLER, Texas — Home air conditioning is not an expense —it is an investment.

That is a major element in General Electric's approach to the residential air conditioning market this year.

To put the point across with clarity and conviction, the G-E Air Conditioning Department here has developed a new consumer presentation called the "animated sales clincher."

It is currently being made available to franchised G-E heating and air conditioning dealers through distributors.

The presentation consists of a looseleaf type binder, the contents of which are printed in four colors on heavy stock. It incorporates gatefolds and slide charts.

'You're Paying for It, Why Not Enjoy Benefits?'

Theme of the presentation is "You are already paying for air conditioning and humidity control, why not enjoy its advantages?"

The presentation points out that the home, its furnishings, and its occupants are subjected to attack by smoke, heat, dust, and dampness.

The effects are paid for through doctor bills, loss of health, damage to the homes and its contents, and more work, explains a "Sales Chit-Chat" booklet that guides the salesman step by step in using the sales clincher.

Air conditioning, the presentation indicates, protects this investment and increases the resale value of the home.

ANIMATED sales clincher shown above is furnished to G-E dealers through distributors.

It stresses the importance of proper installation to satisfactory air conditioning and the qualifications of General Electric dealers to do the job.

'Every Part of Your Installation Important'

"Remember," one chart says, "every part of your installation is important.

"A 3-ton unit cannot air condition a 7-ton house. Your investment is wasted.

"A 5-ton unit with ducts capable of delivering only 3-ton capacity is also a waste of money.

"Inferior wiring and controls also reduce the efficiency of a system."

With a G-E installation, it indicated, "If your house has a 5-ton load it is balanced with a 5-ton capacity installation with properly engineered ductwork and wiring."

Stress is laid on factory training of dealers in all phases of installation.

Another chart does "comparative selling," pointing out features the General Electric unit has and competitive brands may or may not have. Comparisons are made with 11 competitive national brands and space is provided for the dealer to provide "yes" or "no" answers for a strong local competitive brand.

If the dealer does not want to make product comparisons, the "Chit-Chat" book notes, the slide-chart of competitive information can be removed.

Technical Features Included In Clincher

Features listed are quite technical. They include such things as high speed compressor, internally sprung compressor, sight glass on remote units, dual-purpose condenser eliminating liquid receiver, expansion valves, horizontal condenser air discharge, draw-through dual discharge outdoor air circuit, and integral low voltage control in condensing unit.

Aren't they too technical for consumers?

"Don't underestimate any prospect's intelligence," advised

ALCO'S
famous
402
THERMO® VALVES
The Small-Fixture Valve
For All Fixtures

NOW AVAILABLE 2 WAYS

- With BUILT-IN PRESSURE LIMITING ELEMENT—to prevent motor overloading and motor burn-out—denoted by the letters P. L. as #402-2F-PL
- Without BUILT-IN PRESSURE LIMITING ELEMENT—for installations not requiring protection against motor overload—denoted as #402-2F

Actual Size

These are your benefits

√ LIQUID CHARGE—Install in any position.

√ WIDE RANGE SUPERHEAT ADJUSTMENT—2 to 20° F—Easy External adjustment fits Standard Service Wrench.

√ REVERSE SEATING—Assures smooth feed at all loads.

√ RUGGED CONSTRUCTION—Brass, Bronze and Stainless Steel.

√ REMOVABLE STRAINER—At inlet—Easy to clean.

√ CAPILLARY AT SIDE—Allows more head room for mounting.

Field proven models for all these capacities:
REFRIGERANT-12 • ¼, ½ and 1 Ton
REFRIGERANT-22 • ½, ¾ and 1½ Ton
REFRIGERANT-40 • ½, 1 and 2 Tons

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Versatile Hanger Iron

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MINERALLAC ELECTRIC COMPANY
25 N. PEORIA ST. • CHICAGO 7, ILL.

"Chit-Chat." "And even if the Mrs. doesn't know a blower from a condenser, she's still going to be impressed. Cover it fast if neither party seems interested in 'nuts and bolts.' Or summarize it. But leave the strong impression of G-E superiority."

Lists Questions That Survey Should Answer

Laying stress on the need for an accurate survey, another page of the presentation lists a number of questions that the survey should answer. These include:

"Heating and cooling loads carefully and accurately calculated?

"What provision is needed for properly insulated refrigerating and condensate lines?

"What size cooling coil blower required for full capacity cooling operation? Or if furnace blower, is it adequate?

"What duct size required for adequate air distribution?

"What duct insulation required for efficient cooling operation?

"What is most convenient location for control?

"Is unit rated in B.t.u.'s, not just in horsepower?

"What comprehensive wiring plan is required for safe operation?

"Has consideration been given to an adequate supply of registers in proper locations?"

Presentation Emphasizes Dealer Qualifications

After making the survey, to tailor the system to the house, the presentation emphasizes that installation is made under the supervision of a certified dealer, factory-trained by G-E.

Finally, acetate folders are provided in the binder to be used by the dealer to show photos of local air conditioning installations.

Also included with the sales clincher are a supply of newly designed heat load estimate forms, direct mail samplers, and a brochure designed to aid the prospect when selecting central air conditioning.

June 15-Aug. 1

Cincinnati Utility, Newspaper Sponsor Cooling Promotion

CINCINNATI—Jointly sponsored by The Cincinnati Gas & Electric Co. and the *Cincinnati Enquirer*, an air conditioning promotion will be staged from June 15 to Aug. 1, it was announced recently.

All types of air conditioning units, dehumidifiers, and fans, as well as heat pumps, will be included in the display in the CG&E lobby.

A novel contest is being planned to focus attention on all the equipment, which will include year-round gas air conditioning units.

On Wednesday, June 17, the *Enquirer* will publish a special section devoted to the equipment being promoted.

Bryant Receiverless Condensing Unit Claims More Efficiency

INDIANAPOLIS—Subcooling of hot liquid refrigerant in its new receiverless remote condensing unit gives as much as 10% more efficiency or lower operating costs, according to Bryant Mfg. Co. here.

The increase in capacity is made possible by a specially designed duplex coil which makes use of larger diameter tubing, with a resultant elimination of one coil pass and an increased primary coil surface without significantly increasing over-all coil face area. The coil has two sections—the hot gas condenser section and the liquid subcooler (Fig. 1).

This subcooler lowers the liquid refrigerant as much as 21°, and each degree of subcooling results in a ½% increase in capacity, stated Bryant service and application manager J. A. Mekel.

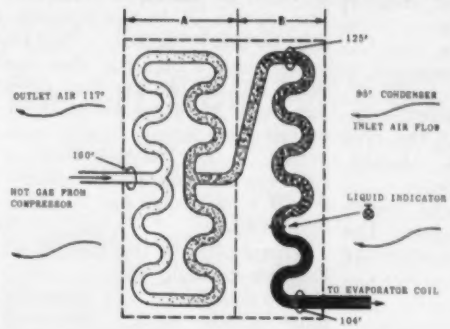


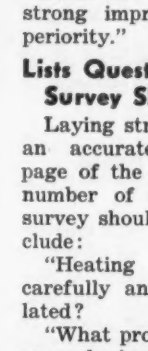
FIG. 1—Diagram of Bryant duplex condensing coil which uses no receiver and which subcools liquid refrigerant to within a few degrees of ambient.

"Elimination of the receiver not only results in lower cost design, but means that the liquid refrigerant is contained in the working part of the coil rather than in an inactive receiver where little or no cooling action occurs."

A liquid level indicator on the coil makes it easy to determine correct charge, he added.

The fully engineered receiverless condensing unit will generate 9,120 B.t.u.h. per kilowatt input on the 3-ton unit.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.



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No danger from toxic residues because it's FOOD GRADE. Simple and safe to use with ANY machine.

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Now, in Safe, Mailable 8 oz. Plastic Bottles and 200 lb. Drums.

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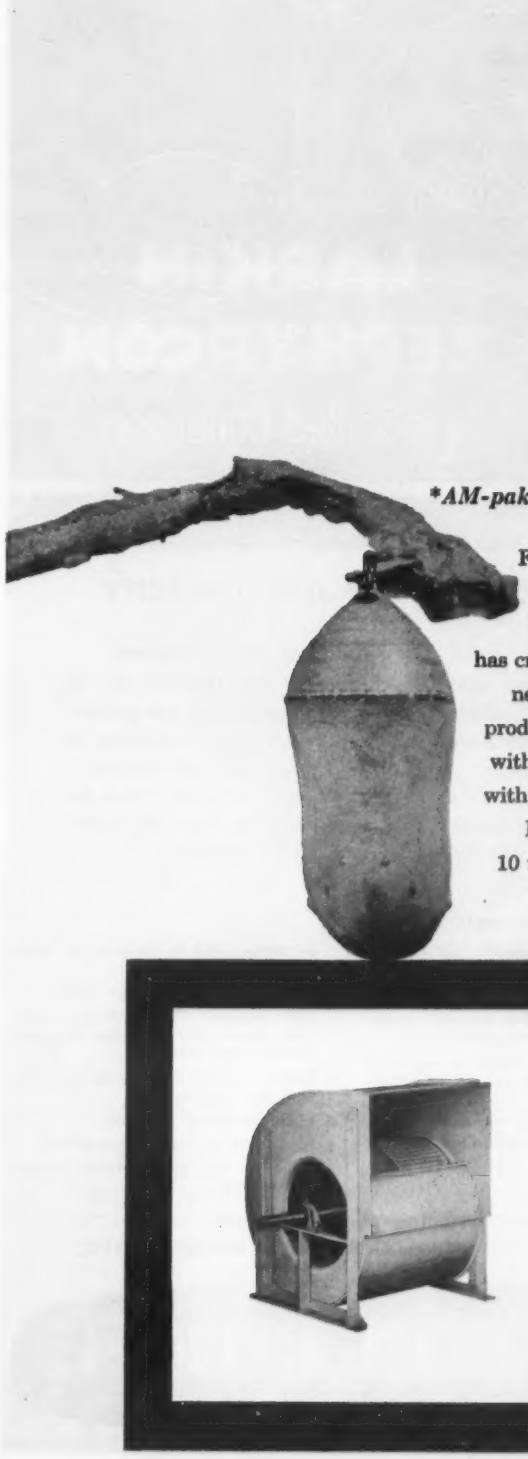

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For evaporative condensers, air handling units and heavier heating equipment, Utility has created AM-pak, an entirely new design priced for high production, combining efficiency with flexibility, strength with perfect dynamic balance. Ranging in diameters from 10 to 36 inches, the rugged blower wheel has 64 specially curved blades, features a conical center disc construction and operates at static pressures up to 6¼" W.G. You deliver greater air-power with less horse-power when your equipment is built with AM-pak.

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*Air Moving Package.

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1, Col. 1)

politically by independent, dissenting, angry men. In the eyes of their sovereigns, though, they were lawbreakers.

Our constitutions and proliferations of laws came later. The latter were accessories after the fact.

Laws vs. Justice

Laws are made by men. Lawmakers, being human, can err—and sometimes do.

When they make flagrant mistakes, it becomes the *higher* duty of decent citizens to raise the roof until an unfair law is repealed or amended. Otherwise the concept of Justice occasionally becomes farcical.

We submit that the idea and *ideal* of Justice are far more important than the sterile duty of blind obedience. Puerile pandering to the Sacred Cow of Law can become a silly shibboleth if a particular law is unfair or immature.

Frequently, in the history of English-speaking peoples, idealistic disobedience has been the most effective method of wiping nonsensical laws off the books. (Even governmental enforcement units occasionally encourage "test cases" which they hope to lose.)

The Conscientiously Disobedient *are needed for publicity purposes*—to arouse apathetic voters and lawgivers, and to alert both to miscarriages of Justice.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

'Some of My Best Friends Are Lawyers'

Not long ago a handsome, brilliant, sociable lawyer whom "Dope" admires immensely, confused us. (We think of the best come-backs two days too late.) He asserted that farmer Yankus was off-base because he Disobeyed the Law, Period.

And obedience to the Law, in his view, is sacrosanct. This lawyer-friend *should* feel that way, perhaps, because Law is his business.

However, let us look at the record of this case.

By testimony of his neighbors Stanley Yankus is a "nice guy" and a good citizen. He was graduated from high school near the top of his class. He took a lively interest in community welfare projects, was a member of the school board, and promoted the building of a new school.

Stanley's "crime" was this: He had absorbed from his study of the American Constitution the notion that a man has a right to manage his own property as he sees fit, so long as he does not injure his neighbor.

There is a provision in the Constitution, for example, that "no person shall be deprived of life, liberty or property without due process of law."

A government bureau—the Agricultural Stabilization Committee—told him he was wrong on both counts. He didn't even get a chance to vote on the law by which he was hung. That is why America is losing a good citizen and Australia is gaining one.

Independent farmer Yankus reckoned that the most economical way to run his poultry farm was to raise wheat to feed it to his chickens. He asked for no handouts; nor was he throwing wheat on the market for sale.

Year after year the ASC agents hounded Yankus, and slapped heavy fines on him—sometimes equivalent to his entire net income. This galled him, and he rebelled, stating:

"I am not fighting for the right to grow wheat. I am fighting for the right to own property. If I am forbidden the use of my land, then I do not own it. This is tyranny."

The Right to Protest Is Inalienable

Is it not ominous that bureaucratic persecution of Stanley Yankus occurred under a Secretary of Agriculture who has been striving mightily to restore farming to a competitively free market?

Even Secretary Benson could not prevent his overzealous flunkies from smashing this courageous man's Right to Be Free.

Brother Yankus, incidentally, is not the first American who has left our shores to avoid harassing interference with his farming. In recent years, loads of Mennonites have shipped out to South America for the same reason.

They, too, refused to kowtow to bureaucratic field hands who were hell-bent on enforcing the *letter* of an unfair law to its last P or Q.

Our Constitution guarantees citizens "the right peaceably to assemble and petition for a redress of grievances."

That Stanley Yankus has done, gorblessim!

Moreover, his forthright action is getting results. The Senate has passed a bill which would remove all controls on wheat grown for on-farm use as animal feed.

"That, of course, is the es-

(Concluded on next page)

For Performance — Capacity — Low Maintenance

Select a

LARKIN ZEPHYRCON

Air-Cooled Condenser

9 Belt-Driven Models—5 to 40 Tons 5 Direct-Drive Models—2 to 10 Tons

ENGINEERED FOR PARALLEL USE FOR VIRTUALLY ANY CAPACITY

Larkin Zephyrcon Air-Cooled Condensers are available in two series: direct-drive FC models—for economy and minimum maintenance; and belt-driven BFC models—for larger installations and the lowest possible noise level.

Multiple circuits—for operating more than one compressor from a single condenser—are available for all models at no extra cost.

PEAK PERFORMANCE YEAR 'ROUND

When used with the Larkin Posi-Trol control system, which maintains head pressures in low ambient temperatures, the Larkin Zephyrcon functions at peak performance the year 'round in any climate.

Compare the features point for point; check the performance data, and make the wise selection—Larkin Zephyrcon Air Cooled Condenser.

BASIC RATINGS (30° + D)

FC SERIES — DIRECT DRIVE

Model No.	Capacity at Evaporator BTU/HR	Tons	Cfm
FC-2	27,700	2.30	2500
FC-3	37,350	3.21	3500
FC-5	62,500	5.21	5500
FC-8	95,600	7.96	7300
FC-10	124,000	10.3	9100

BFC SERIES — BELT DRIVEN

Model No.	Capacity at Evaporator BTU/HR	Tons	Cfm
BFC-5	62,500	5.21	5500
BFC-8	95,600	7.96	7500
BFC-10	124,000	10.3	9100
BFC-13	149,200	12.4	12000
BFC-16	191,200	15.92	15000
BFC-20	248,000	20.6	18200
BFC-26	298,400	24.8	24000
BFC-32	382,400	31.8	30000
BFC-40	496,000	41.2	36400

OUTSTANDING FEATURES

- Patented Larkin cross-fin coil — aluminum fins and staggered copper tubes.
- For use indoors or outdoors.
- A single large fan on BFC model assures low operating noise level.
- Motor on BFC model is standard NEMA design mounted on adjustable base.
- Slow speed motor on FC model is permanently lubricated, has overload protection, and is mounted on resilient base.
- Casing is of heavy-gauge steel.
- Unit finished with baked-on epon-base primer and melamine top coat for maximum protection.
- Motor is enclosed in casing, protected from the weather.
- Discharge shield available.
- Fan Guard is standard equipment.
- Return bends protected by heavy-gauge shield.

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6-8-59

Air Conditioning, Heating & Refrigeration News

450 W. Fort Street
Detroit 26, Michigan

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from preceding page)

sence of the Yankus case," declares Senator Hart, sponsor of the bill.

Farewell Cassandra Prediction

En route to Australia, farmer Yankus reiterated his apprehension about what the United States may be like when his children grow up. "Socialism will get worse instead of better here," he Cassandraed.

"People in the United States are trading their freedom for handouts. If I had gone to the government and said, 'I don't want to work, give me some of the taxpayers' money,' I would have been a good citizen. But when I said I wanted to make my own living, for myself and my family, I was fined.

"The competent people of the country are being persecuted to support loafers."

Australia Isn't Socialistic

Our lawyer-friend also opined that Yankus (incidentally, what a perfect name: "Yank" plus "U.S.") may be jumping from the "frying pan into the fire."

Quite a few Americans still think of Australia as being a Socialist nation. That's an out-of-date notion.

Having studied Australia personally, this writer differs vigorously. Yankus is headed on the right track toward obtaining personal freedom and JUSTICE.

The "down-under land" has tried socialism and found it wanting. The Labor Party was turned out years ago. Conservatives rapidly have desocialized Australia.

It is pre-eminently a Nation with a Future for free souls, vigorous men, and ruggedly independent spirits.

Matter of fact, Australia isn't as socialistic as we are.

We Are Being Swindled

In the heat of inditing this polemic, we almost forgot to mention the greatest Yankus contribution of all. He publicized the flagrant injustices of the Agriculture Stabilization Act.

Farm subsidy programs constitute the most monstrous scandal in our nation's history.

Multimillion-dollar checks to sharpie investor "farmers" are not uncommon. (No horny-handed sons of toil, these).

Shoestring operators acquire immense acreage for pittance investments. Goofs in the hills get rich on our high-cost grocery bills *while loafing.*

Income-tax payers fork out more than a million dollars *every day* just to silo our ever-mounting surplusses of unsaleable foodstuffs.

It's costing all of us nine *billion dollars a year* (in taxes alone, not to mention excessive prices) to maintain these ridiculous farm subsidy "laws."

When, oh when, are we going to get wise?

Away We Go on a Pinched Broomstick

Contracts for advanced work on a revolutionary space ship motor have been awarded, we hear via the grapevine. This handy-little-dandy is called "a magnetic pinch plasma engine."

For power, said odd-ball motor will convert oxygen into ions and electrons. These, in turn, will be compressed in "an invisible cylinder of magnetism" and shot out rearward at tremendous velocity.

Specialized "curve electrodes," it is indicated, result in thrust-producing "magnetic pinches." (Are you still with us? We fell off the train at Pittsburgh.)

Still-unsolved problem is that of cycling these "pinches" for continuous operation — somewhat like cylinders of an automobile engine are cycled.

It is estimated that major problems of this revolutionary space engine will be solved sometime in 1960, and that a production model which can zoom a flight to Mars or Venus will be in action by 1964.

To teenage hot-rodders: there are no traffic cops in Outer Space yet. And this baby is supposed to do 50,000 m.p.h.

Martin Named Asst. Engineer On ARI Staff

WASHINGTON, D. C.—Marcel R. (Dick) Martin, 31, has joined the Air-Conditioning & Refrigeration Institute's Engineering Dept. staff as assistant engineer, it was announced by Frederick J. Reed, chief engineer.

M. R. Martin

Martin will assist Reed in his work with the engineering and standards committees of ARI product-sections on standards, certification programs, and other technical matters, as well as other activities of the Engineering Dept., such as the preparation of technical booklets and releases and liaison with technical societies and trade associations.

A graduate (B.S. in heating and air conditioning) of North Carolina State college, Martin has had six years of varied experience as a mechanical engineer since his graduation in 1953, much of it with architects and consulting engineers in Jacksonville, Fla., Richmond and Roanoke, Va., and Washington.

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"BUY FROM FABRIKANT"

Lowest prices for imported copper, brass, aluminum sheets, coils, manufactured strictly to ASTM and Federal specs. Large stocks all gauges and sizes on hand New York warehouse.

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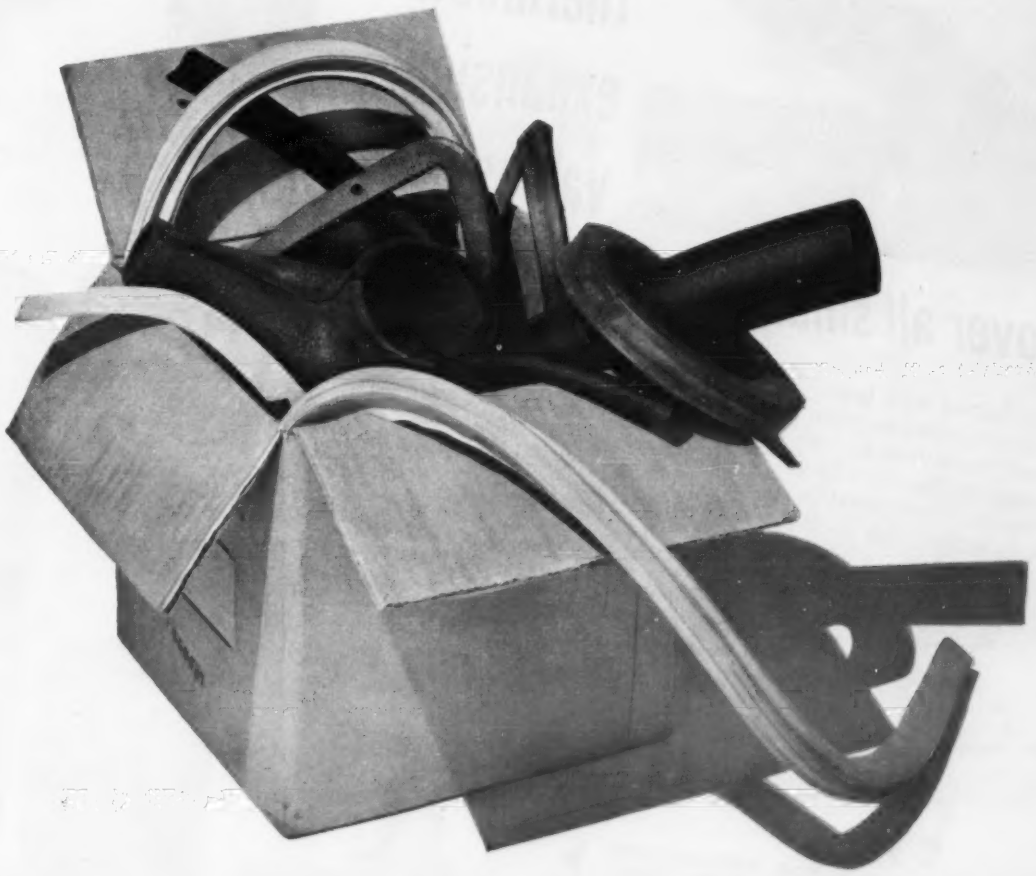
B.F.Goodrich



If it sweats, rattles, shakes or leaks . . .

. . . it shouldn't! And if you ask B.F.Goodrich, it won't! B.F.Goodrich, as the largest producer of sponge rubber and cellular plastic, makes special or standard parts for the refrigeration and air conditioning industry. Typical functions of these parts are sealing, gasketing, insulating and vibration damping — under the most trying conditions.

So get the advantage of the experience that has put B.F.Goodrich cellular materials into The Sheraton Hotel, Philadelphia; The Conrad Hilton, Chicago; The Corning Glass Building, New York and many other New York office buildings. Write The B.F.Goodrich Company, 580 Derby Place, Shelton, Connecticut.

B.F.Goodrich ***industrial cellular materials***

Serviceman Gets New Privileges, Responsibilities

Frigidaire Finds Component Replacement Program Cuts Inventories, Time, Costs

By Frank J. Versagi

DAYTON — Frigidaire's component replacement program, instituted on a limited basis in April, 1956, was found successful enough to warrant expansion of the program. Originally designed only for household units built from 1947 through 1956, the system is now applicable to household units built from 1933 and to commercial equipment.

As anticipated, the component replacement program has been found to reduce the inventory of units needed to handle service, reduce time and customer inconvenience during repair, and reduce cost of repair to customer.

While granting the serviceman new privileges when dealing with sealed units, the Frigidaire component program also assigns him new responsibilities. The serviceman can now cut into the system, diagnose as necessary, and replace defective components. It follows that he is also allowed to charge refrigerant on the job.

To handle these privileges proficiently, the serviceman must be responsible for a thorough diagnosis of the system, more thorough than would be required if he merely had to replace the entire sealed system. And he must responsibly hold to tested and approved procedures. As is always the case, short cuts and omissions result in callbacks or complete unit failure.

Significant Innovations

Significant innovations in the Frigidaire replacement program were the use of special fittings which made flaring or soldering unnecessary and the use of a visual method for charging refrigerant into the system.

In addition, the Frigidaire component replacement procedure makes use of special tools and equipment which greatly simplify several of the operations.

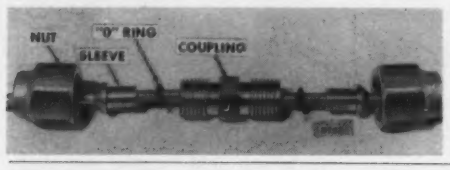


FIG. 1—Specially developed compression fitting make soldering or flaring unnecessary in Frigidaire component replacement program.

The basic procedures used are conventional except for the handling of lines and fittings: clean lines, cut lines (preliminary), replace component, cut lines (finish), assemble connectors, evacuate, charge, and leak test.

The special mechanical fittings developed for the component replacement program (Fig. 1) consist of a connector body, sleeves, "O" rings, and flare nuts. By proper assembly of these four parts, the "O" ring is compressed around the outside diameter of the refrigerant tubing to form a leak proof seal capable of withstanding pressures and vacuums far beyond that of a normal operating system, according to Frigidaire.

All paint, scale, and foreign matter must be removed from the refrigerant lines for a distance of approximately five inches in the area where the lines are to be cut and the connectors are to be assembled. In cleaning, Frigidaire insists that only medium grade steel would be used since other abrasives might scar the tubing, making sealing difficult.

Cleaning Prior to Cutting Recommended

Cleaning prior to cutting is recommended to prevent foreign matter from entering the tube. Further, such cleaning allows easier assembly of the connectors which maintain a close tolerance between the lines and the sleeves.

Primary cuts to free the component from the unit should be made as close as possible to the defective part. A pair of side cutter pliers is recommended for this preliminary cut, to pinch off the lines, protecting the inside of the system from contamination. Final cutting of the lines, just prior to installing the connectors, must be made with a sharp tubing cutter.

Before any replacement is attempted—after a component has been diagnosed as inoperative—the system must carefully be discharged by loosening the unit charging screw sufficiently to allow slow escape of the refrigerant. Where necessary, a discharge line to the outside is attached.

Burnt Oil Check Should Be Made

Once a system has been cut into, a burnt oil check should be made. A sample of the oil from the inoperative compressor is collected in a clear glass container and compared with a standard color band supplied by Frigidaire. If the oil is darker than the "maximum color test," the indication is that the system has been host to a major chemical breakdown, and all components must be replaced.

Each replacement compressor contains a specific charge of oil, and no lubricant need be added when a compressor change is made. Each replacement compressor also contains a refrigerant holding charge to insure positive internal pressure, eliminating the possibility of moisture or air entering the shell during storage or shipment.

The holding charge must be released by backing off the compressor charging screw. The screw is tightened after the charge has escaped and kept tightened during other operations preliminary to actual evacuation and charging.

Filter-Drier Replaced With Each New Compressor

A new filter-drier is installed every time a compressor is replaced in the Frigidaire program. The company insists that

2 great AP thermostatic expansion valves
cover all smaller tonnage equipment
(up to 3 tons)
Customers stay happy when you service their equipment (a few typical, small-tonnage applications are shown on tabs at right) with these dependable valves. And remember that A-P's complete capacity line of TXV's (¼ to 25 tons, R-12) satisfies any application. Write today for data on the line preferred by leading manufacturers. Ask for Bulletin E220.
MODEL 207 FOR APPLICATIONS NOT REQUIRING A PRESSURE LIMIT
Available with either internal or external equalizer, this versatile valve maintains maximum evaporator efficiency at all times. Model 207-C (internal equalizer type) is made in capacities of ¼, ½, 1 and 1½ tons R12. Model 207-D is available in the above sizes but for external equalizer applications. Featuring a larger diaphragm and head plus special packing, the 207-D is also available in 2- and 3-ton sizes — both internally and externally equalized.
MODEL 209 FOR APPLICATIONS REQUIRING A PRESSURE LIMIT
You can protect equipment performance during pull-down or peak loads with the mechanical, pressure-limiting Model 209 expansion valve. At pressure limit setting from 10 to 55 lbs., valve functions as an automatic expansion device to provide overload protection; below the pressure limit setting, valve functions as a standard thermostatic expansion device. Capacities: ½, 1 and 1½ tons R12; ¼, ½, 1 and 1¾ tons R22; 1, 2 and 3 tons R40.
Drink dispensers
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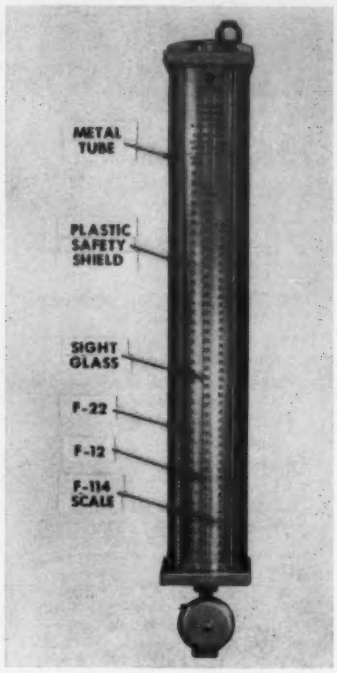

FIG 2—Transparent charging cylinder allows visual measurement of refrigerant charge. Scales for several refrigerants are calibrated in weight ounces.

alcohol should never be charged into any of the systems repaired under the component replacement programs.

Frigidaire's charging operation makes use of a special charging fitting and a charging cylinder (Fig. 2).

The charging fitting mounts on the charging stud of the compressor and permits attachment of a flexible line for evacuating and charging the unit. A copper gasket, placed over the charging stud prior to attaching the charging fitting, is forced against the compressor housing by the knife edge on the fitting, and forms a double seal. Copper gaskets should only be used once.

Serviceman Can See Amount of Charge

Using Frigidaire's charging cylinder, the serviceman can see the amount of charge being measured into the system; the sight glass is graduated in ounces—with scales for R-12, R-22, and R-114.

Assembled in the top plate of the charging cylinder is a bicycle valve type fitting which can be depressed while filling the cylinder with liquid refrigerant from the bottom connection. Using this cylinder, charges can be controlled within ¼ ounce. When not in use, the cylinder should have all valves closed and all fittings capped.

Cylinder Should Be Charged In Shop or Truck

In use, Frigidaire suggests that the cylinder be charged with the needed amount of refrigerant in the shop or truck. The cylinder is charged by removing the caps from the fittings and connecting a drum of refrigerant as shown in Fig. 3. After completely opening the bottom cylinder valve and the drum valve, the top cylinder valve is depressed. This allows a small amount of refrigerant vapor to escape while the cylinder is being filled with the desired amount of liquid.

At this point, the valves are all closed and the refrigerant drum is separated from the charging cylinder.

Through the charging fitting on the compressor charging stud, the repaired system is evacuated by connecting the charging cylinder, gauge manifold, vacuum pump, and compressor in the conventional manner. When the connecting lines hold a 28-in. vacuum for at least 2 minutes, the charging tool is opened and the system is evacuated for 20 minutes, and must hold vacuum for 5 minutes.

During evacuation of household refrigerators, the freezer should be heated with an electric light until the freezer is hot to the touch, care being taken not to damage thermoplastic structural members.

After evacuation, liquid refrigerant is allowed to be drawn into the compressor. Hand heat is applied to lines and manifold to force all refrigerant into the compressor. The charging tool valve is closed and the tool removed from the compressor. A final check is made on the tightness of the compressor charging screw, and the entire unit is then leak tested.

Recognizing the extreme importance of proper diagnosis if unneeded component replacement is to be avoided, Frigidaire stresses several points:

"Five minutes spent listening to the customer may save valuable minutes when you start your actual diagnosis—and indicates you are interested in your customer's problems."

"Accurate determination of temperatures, switch settings, wattages can only be made with the help of proper tools and instruments."

"One of the most common errors made on temperature complaints is reading air temperatures instead of product temperatures—freezer temperatures should be taken between the packages of frozen food, not in the air and not on the bottom surface of the freezer. Food compartment temperatures should be taken in some beverage or article of food which has been stored in the refrigerator at least eight hours."

"Although the percent of running time will vary depending somewhat on model and usage, the following figures apply:

AMBIENT	PERCENT RUNNING TIME
70°	30-45%
90°	40-65%
110°	75-95%

"On those commercial systems where there are no gauge fittings, it is necessary to use wattage as a guide in determining proper operation."

"By attaching a test cord directly to the compressor, thus eliminating the relay switch, and various connections, we can determine quickly whether failure to run is the fault of the compressor."

"Do not change a compressor for noise until all external noise sources have been checked and eliminated."

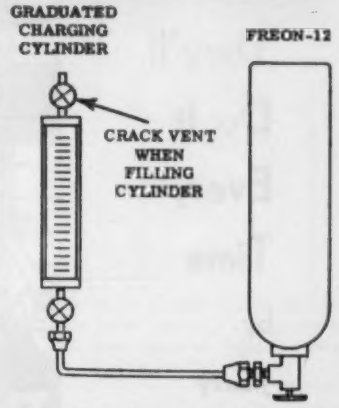

FIG. 3—Shows filling of charging cylinder from refrigerant drum. This is done at shop or in truck, and only easily handled charging cylinder is carried on the job.

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They'll Do It Every Time

by Jimmy Hatlo

SLAPHAPPY JERKIMER THINKS HE'S DRIVING RIVETS AGAIN! HOW DOES HE EXPECT ANYBODY TO READ THE SECOND PAGE WITHOUT A CROWBAR?!
HE'S GOT NOTHIN' ELSE TO DO—JUST DON'T LEAVE YOUR HAT AROUND—HE'LL STAPLE IT TO THE DESK—
OH, FOR THE GOOD OLD DAYS WHEN HE SPENT ALL HIS TIME MAKING CHAINS OUT OF PAPER CLIPS—
HE USES THAT RIGHT FLIPPER OF HIS LIKE SLAPSIE-MAXIE ROSENBLOOM—
HE CAN'T THROW ANY WEIGHT AROUND AT HOME, SO HE TAKES IT OUT ON THE BANG-BANG TOY—
BLAM! BLAM! BLAM! BLAM!
ONE IN EVERY OFFICE. THE VIRTUOSO OF THE STAPLING GUN—

Jesse James In Pious Dress (Or, The Annual Steal)

AGAIN STEEL UNIONS are demanding higher wages—whether they deserve them or not. Their belligerent aggressiveness comprises a continuing plague on consumers (you and me).

"I want more money every year—no matter whom it hurts"—is their regular sing-song.

Arrogant steel-union bosses argue that dues-payers need more INFLATED money. So will a lot of other people.

It's a ratrace between continuously inflationary wage uppings and subsequently higher prices for all of us.

Regularly the "steel steal" bargaining triggers another round of too-high pricetags on *everything*. Here's hoping the steel makers will stiffen their backbones this summer during their negotiations.

Note these facts:

1—Employment costs over the past 18 years have risen almost 10 times faster than shipments per man-hour worked. Thus steel prices have been forced upward steadily.

2—Present average wage of steelworkers is $3.03 per hour—84 cents more than the average of all U.S. manufacturing.

3—Costs of producing American steel are so high that meeting foreign competition is becoming increasingly difficult.

4—Adequate profits are essential for modernizing plants and for creating jobs.

Unearned purchasing power is NOT the key to diffused prosperity. Fallacy of that theory (wages must increase every year) is that it ignores the over-all ability-to-pay factor. Stupidly it indentifies purchasing power with the number of dollars in a *select few* weekly pay envelopes — while ignoring rising costs which disturb and disrupt the rest of us who can't participate in a union-mongered annual STEAL.

American taxpayers and consumers have suffered over and over again during the last 30 years from political favoritism toward union monopolies. Nobody really loves "teacher's pet" any more except certain politicians. Even union members are getting wise.

Law-protected union negotiations can price their members out of the market. Witness coal miners. Their case is a *cause celebre* for caustic economists. John L. Lewis is the greatest promoter the oil-and-gas-heat people ever have had.

Result: worst pockets of unemployment in this country are located in the coal fields of Pennsylvania and West Virginia.

When will voters learn that What's Good for a Pressure Group is BAD for US—the People? Inexorably every selfish Boss of a union becomes a slave himself, moreover, after he succeeds in making a Government Bureau kow-tow to him.

Here's how a Swiss logician phrases his dilemma:

"If a boss pins me underneath, he is on top of me. By force, he can hold me down. But in so doing his own energies must be diverted from creative thoughts to destructive action. And anyone who destroys is himself destroyed eventually. Compulsion has only the power to restrain, repress, and suppress.

"You and I cannot upgrade ourselves while we are inhibiting someone else's creative action."

These observations about the perversity of human nature should not be taken lightly. Almost every civilization has learned, to its sorrow, that monopolistic Bosses order subordinates into battle, tax them unfairly, and judge the latter's human idiosyncracies too coldly.

The urge to take unfair advantage is a universal weakness of human nature. Authority over the behavior of employes and union members eventually becomes a personal liability. Over-burdened wielders of such power tend to become arrogant, intolerant, disrespectful and, eventually, unrespected. (And how are you doing Mr. Hoffa?)

A union leader, like any other Boss, is deluded by sycophants into supposing that he rarely makes mistakes. It isn't his fault, really, that his ego becomes so unbalanced. Adulation by the weak-willed (who want to be told what to do) plus flattery by self-seeking toadies, combine to turn a nice guy into a martinet.

This is what is occurring today in the Steel-Steal confabs. Polls of, and interviews with, steel workers reveal that they are embarrassed by their bosses' demands for ever-higher wages.

The workers themselves, the dues-payers, have become sophisticated about the wage-price spiral.

They'd rather settle for the *status quo*, and do their bit to halt inflation. Here's hoping their wishes come true.

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'The Conscience of the Industry'

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"A newspaper conducted on the true and natural principles of such a publication ought to be the register of the times, and faithful recorder of every species of intelligence. It ought not to be engrossed by any particular object, but, like a well-covered table, it should contain something suited to every palate."—*John Walker.*

Wayne A. Johnston, president of the Illinois Central Railroad, sent this letter to employes. Quote:

"At a time when profits are discussed, it is worth while to dwell on what they are for. Profits are the rewards of successful work. They represent to the owners of a company what the savings from a pay check do to an employe. Just as most of a railroad's income goes for expenses, so most of any employe's pay check goes for the essentials of life—food, clothing, and shelter. Out of savings, he buys the extras of life—a new car or home, college education for his children, a vacation trip.

"A company uses its profits in a similar way. First of all, profits provide the dividends paid the owners of a company for the risk they take in investing their money. (It is ironic to note, however, that the owners of the Illinois Central this year will receive only eight cents out of each dollar earned, while the tax collectors will receive 64 cents, or almost two thirds of the total earned.) In addition to this use, profits are the 'seed corn' of the future. They provide the funds for the improvements that must be made if a company hopes to remain in business."

A speech should be so short that when it's over you can still remember the beginning.

A sharp tongue invites a split lip.—EVELYN ZEMKE.

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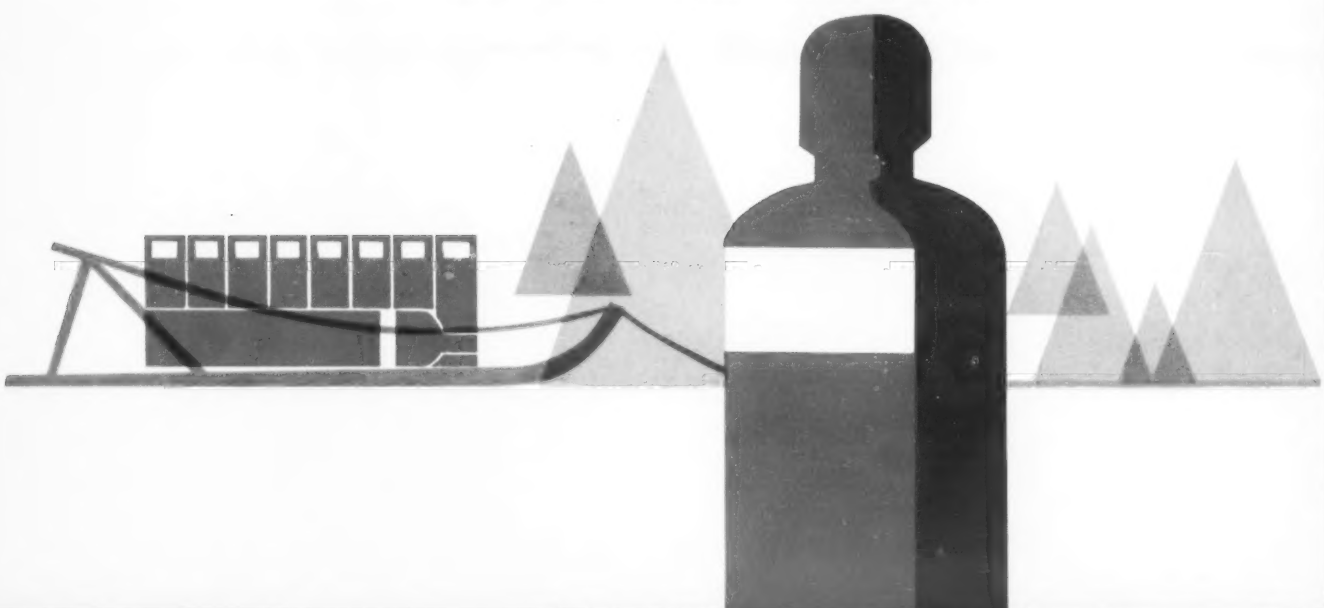
We think you'll enjoy knowing Ike. He *is* Ucon Refrigerants– America's newest, top-quality refrigerants now available to you. He stands for the *people* who go with Ucon Refrigerants... people who know and care about your problems... people who make the difference. So, remember Ucon Ike when you think of Ucon Refrigerants – made by Union Carbide Chemicals Company. Ansul Chemical Company is exclusive sales agent.



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Systems for Larger Homes Need Return Air In Each Room, Believes Ft. Worth Contractor

By C. Dale Mericle

FORT WORTH, Texas — In the face of what he considers cut-price competition and corner-cutting installations, long-time contractor Curtis L. Love is concentrating his residential air conditioning activities in the larger, custom-built homes.

Owner of Love Refrigeration Co., Inc. here, he says, "I can't compete in the small home market, but there's not too much competition in the bigger home field.

"Some of these home builders have been burned in the past on air conditioning, so they stick to someone whom they can depend on to do a good job at a fair price," Love declares.

About two-thirds of his residential installations go into new custom-built homes, and better than half of these are done for the builder directly. In the other instances it's the purchaser of the home that selects Love to put in the year-round system.

Asking price of Love's residential systems probably appears high, but this is not the result of "gold plating," he says. Rather, it's simply a matter of designing and installing the jobs right in the first place.

Not only does this approach give satisfaction to the customer, but it costs the customer much less than trying to correct a poor installation, which often is necessary, according to Love.

Basic ingredient in good residential air conditioning, he believes, is the provision for return air in every room, if at all possible.

"A single central return, especially in the larger home, is bound to result in wide temperature differences from room to room," Love believes.

Use of a balancing damper in each supply run is also essential for a good system, according to Love (and who can argue?).

Another approach of Love's planning is to locate the coil and furnace unit in the attached garage. (All of his residential installations now involve a remote, air-cooled condensing unit.)

"This costs a little more than locating the heater and coil unit in a more central part of the house, but it gives a system so quiet that people can't tell they have air conditioning as far as the noise is concerned," he asserts.

A two-speed motor is always used on the system blower, he adds. It automatically switches to high speed when the thermostat is set for cooling; to low speed for heating.

Love's preferred method of air distribution is to install the supply system in the attic, using high inside wall registers wherever possible. Where there is no room for side wall outlets, or they are otherwise impractical, ceiling type diffusers are specified.

Return air grilles are located in the baseboard, preferably on outside walls. Return air ducts run beneath the floor. With crawl space construction the return air ducts are in the crawl space; with on-slab designs, they're buried beneath the slab.

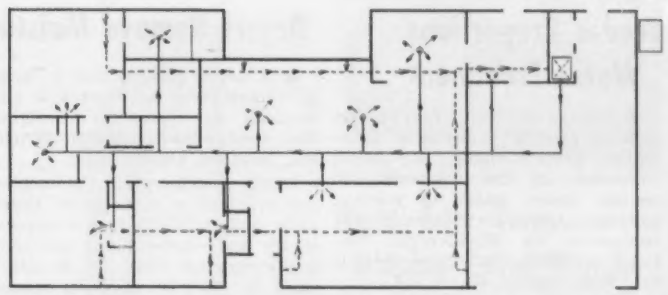
What can be considered a typical layout is shown in the accompanying drawing which illustrates the floor plan and ductwork schematic for a single-story ranch style house measuring 76 ft. long overall by 34 ft. deep.

A Frigidaire 3-hp. remote air-cooled condensing unit is represented at extreme upper right outside the garage area. Within the garage but enclosed is the coil and a Frigidaire 130,000 B.t.u. gas furnace.

Supply air ductwork is indicated by solid lines and arrows; the return air system is shown by dotted lines and arrows.

Note that there are six high side wall registers and five ceiling diffusers supplying air to the conditioned space. Seven return air grilles have been provided.

Many of this firm's installations go into larger houses than that shown and use correspondingly larger equipment.



RETURN air from every room if possible is essential for a good system, believes a Fort Worth contractor, who cites the above as a typical layout of a 3-hp. job in a ranch home 76 ft. long. Solid lines with arrows show supply air system in attic; dotted lines with arrows show return air ducts below slab.

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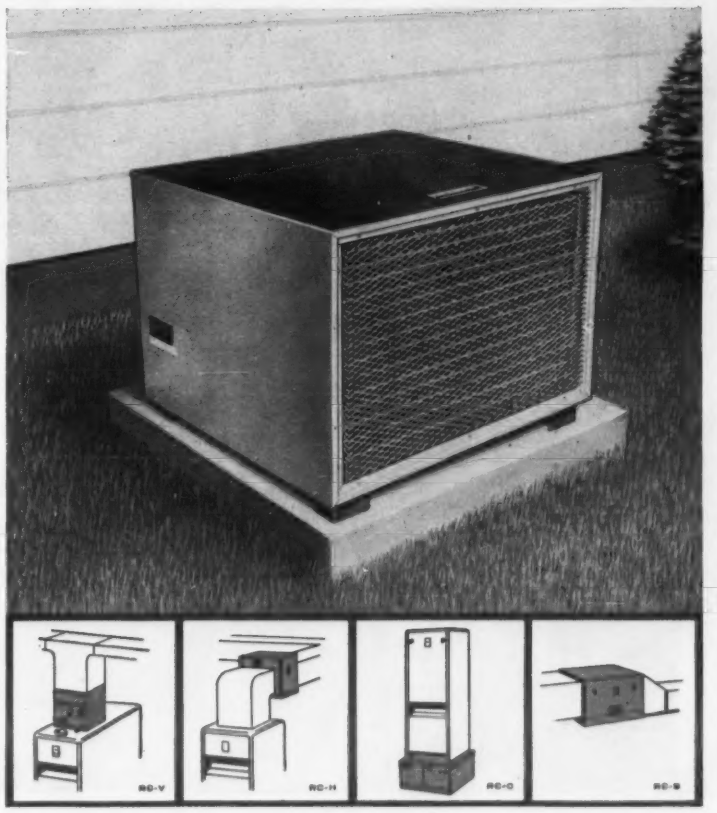

Here it is—the finest condensing unit on the market!

It's the all-new AC-B Condensing Unit in 2-, 3-, 4- and 5-hp sizes. If you haven't seen the "spec" sheets on this equipment, be sure to contact your American-Standard Air Conditioning Division distributor today. And be ready for a surprise when you see the prices! For example, the suggested dealer price for the AC-2B, a 2-hp unit, is only $361.84. And this value is typical of the whole American Standard line!

NEW AC-B HAS IMPROVED DESIGN THROUGHOUT!

To start with, the AC-B is one of the most compact, easy-to-handle units made. This fact, plus these really advanced design features, gives you a *solid* sales advantage:

- Controls are *sensibly* located so you can reach them easily.
- Suction and liquid line valves in front for simplified servicing.
- High-voltage line current is supplied *directly* to condensing unit.
- Relay control panel has improved-design delay-sequence feature.
- Entire electrical system approved by Underwriters' Laboratories for outdoor operation.
- 4- and 5-hp units have *two* condenser fans and motors for maximum cooling efficiency.

Add to the new AC-B any of the American-Standard evaporators, and you have the finest cooling system made.

Here's the "hottest" cooling combination on the market: the all-new AC-B Condensing Unit and one of these advanced-design evaporators!

There's an American-Standard evaporator for *every* installation—big home, small home, *any* size home (and for small commercial jobs, too). Four models—RC-V, RC-H, RC-C and RC-B—for every furnace and ductwork design, and in capacities for 2-, 3-, 4- and 5-hp installations. All units have the added feature of an expansion valve with a thermally aged diaphragm for longer, more reliable service. Be sure you see the new "specification" sheets—and the new low prices—at your distributor *now!*

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It's been called "the most underpriced air conditioning unit on the market!" But don't let the price fool you—the ACP is a finely engineered *quality* unit. Just compare these features with any other package unit: *twin* compressors give continuous air circulation and positive humidity control, with either full- or half-capacity cooling automatically controlled by a thermostat; exclusive heat exchanger cuts refrigerant temperature by an *extra* 20 degrees; powerful condenser fan gives unmatched cooling. And the ACP is protected by a Five-Year Warranty!

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AMERICAN-Standard

Feeder Proportions Water Treatment

● Development of a new system said to provide continuous, automatic proportioning of liquid chemicals in the treatment of cooling tower water to prevent corrosion and scale formation was announced by Bird-Archer Co., Dept. AH&RN, 4337 N. American St., Philadelphia 40.

A feeder supplies as little as 1/10 to 1 gal. of specially filtered liquid chemical into the circulating water every 24 hours, it was explained.

One or two 55-gal. drums of chemical can last throughout a cooling season under normal conditions, with little or no personal attention to the Bird-Archer "Micro Feeder," the company pointed out in its announcement.

Feeding takes place only when tower is in operation. A Bird-Archer test kit is furnished with the system for periodic sampling of cooling tower water, according to the manufacturer.

Dryers Remove Moisture from Compressed Air

● A line of self-contained, "plug in," compressed air dryers is announced by Technical Designs, Inc., Dept. AH&RN, 119 Northfield Rd., Bedford, Ohio.

Using refrigeration principles and available in three types, these units deliver a continuous supply of dry compressed air at moisture levels ranging from -5° F. dewpoint to -60° F. dewpoint measured at atmospheric pressures, according to the announcement.

"Condensed water is automatically and continuously ejected from the unit," it was stated. "Novel arrangement of heat exchange surface directs most of the refrigeration capacity to moisture removal.

"The illustration shows a model H25AP unit which uses a ¼-hp. hermetic air-cooled condensing unit. This unit will handle 45 s.c.f.m. at 100 p.s.i.g. from 95° F. saturated to -5° F. dewpoint. It measures 15 in. long by 15 in. wide by 42 in. high."

Want More Details?

ADDITIONAL details on products that are described on these pages may be obtained by writing the manufacturer at the address given in each What's New story.

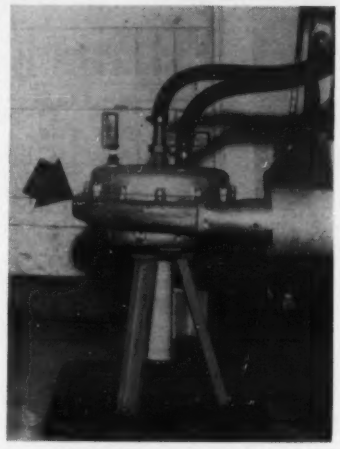
Generator Delivers Steam In 15 Seconds

● A new type of package "boiler," whose weight and volume are said to be only one sixth that of an equivalent conventional unit, is now available from Turb-O-Heat, Inc., Dept. AH&RN, 1133 East 35th St., Brooklyn 10.

"It can deliver continuous quantities of 100-p.s.i.g. steam within 15 seconds, starting with cold tap water," the company claims.

"Design of the Turb-O-Heat generator is based on an entirely new concept, namely a fin-and-tube heat exchanger section rotating at high speed (3,600 r.p.m.) within the casing. The centrifugal force on the fluid in the tubes promotes a rapid flow through the tubes, resulting in a high rate of heat transfer—better than 300,000 B.t.u.h.

"Another major advantage is the fact that centrifugal force acts on the varying density of the liquid, to cause vapor disengagement at the liquid surface rather than at the tube wall. Scale build-up and fouling of tubes are thus prevented.



"Furthermore, the Turb-O-Heat generator acts as a pump on both the liquid in the tube and the hot gases in the shell. Exhaust gas speeds are much higher than usual, so that a 4-in. pipe will suffice where a 10-in. vent would normally be required.

"Because of its compact size—20 by 20 by 30 in. high—a Turb-O-Heat generator finds application whenever space is at a premium, or where fast response is important."

Coupler Compensates For Thermal Expansion

● Its "Base Slide" expansion coupler's sliding piston movement compensates for thermal expansion and contraction in any hot water heating system, according to American Tube Products, Inc., Dept. AH&RN, West Warwick, R. I.

The piston slide design permits full rotation for ease of baseboard installation on supply mains or between lengths of radiation, it was pointed out.

The company said a single coupler will accommodate the expansion of 100 lineal feet of copper tubing.

The Base Slide coupler "fits easily into the narrowest baseboard enclosures or other small pipe chase spaces," the firm stated. "It is made for pipe sizes from ½ to 2 in., and has a temperature range of 40° to 240° F. Double butyl "O" rings and a hygroscopic fiber seal provide triple protection against leakage. Each coupler is factory tested to 150 p.s.i."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

BEFORE YOU BUY, THINK:

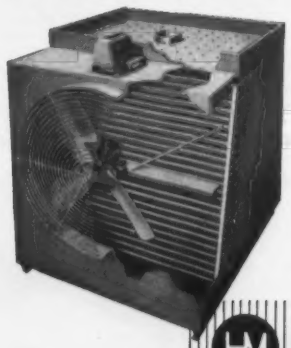
Will fungus attack your cooling tower 2 years from now?

Not if it's a Halstead & Mitchell cooling tower with a 20-Year Guarantee

The specially treated wood decking in H&M towers resists rotting, fungus attack and algae which accumulates and obstructs air flow in most other towers. Performance remains "like new" in H&M cooling towers year after year.

Only Halstead & Mitchell offers a 20-Year Guarantee on the wetted deck against failure due to rotting or fungus attack.

Other H&M features for unusually low maintenance include permanently sealed fan bearings, and a heavy gauge steel cabinet protected against corrosion by three plastic coats applied *after assembly*. Be sure. Ask your local wholesaler for H & M towers, or write to Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.



H & M COOLING TOWER WITH PRESSURE TREATED DECKING

HM Halstead & Mitchell

Water-Cooled Condensers • Cooling Towers • Air-Cooled Condensers • Finned Coil Products

Handy Tube Bender

Smoothly Bends any pipe or Tubing ⅜"-1⅛" O.D.

• Just a twist of the wrist assures perfect, even bends — right angle, any angle, U and offset. Save enough on ONE job to pay for your HANDY BENDER.

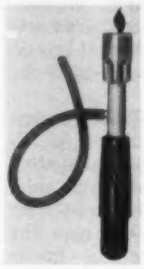
See your supply house—or write for free folder today.

HOLSCLAW BROS., INC.

428 N. Willow Road • Evansville, Indiana

Halogen Leak Detector Offered by Kidde

● A new halogen refrigerant leak detector is offered by Kidde Mfg. Co., Inc., Dept. AH&RN, 35 Farrand St., Bloomfield, N. J.



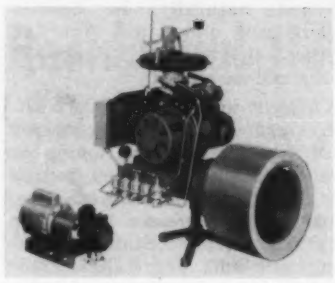
The user simply places the hose at the point of suspected leakage, it was pointed out. Even traces of gas turn the blue flame a bright green, according to the company.

"This small dependable detector can be carried in a serviceman's pocket and is especially suited for use in confined areas," it was stated. "Each throwaway charger burns for a half hour. The off-on control makes it a cinch to operate.

"It doubles as a blow torch and a soldering tool as well. The Halide fitting slips off to provide 3,500° of pin point heat. To solder, slip on the small soldering tip."

Complete kit which includes detector, five chargers, and soldering tip packed in a steel case is priced at $8.95.

Back Pressure Determines Burner Capacity



● Development of a "Turbo-Flame" burner for scotch marine boilers where there is a known or possible back pressure or positive furnace pressure is announced by The Mettler Co., Inc., Div. of Eclipse Fuel Engineering Co., Dept. AH&RN, 1101 Buchanan St., Rockford, Ill.

Five standard models of Turbo-Flame burners are included in the line, ranging in capacity from 1,000,000 to 5,000,000 B.t.u.

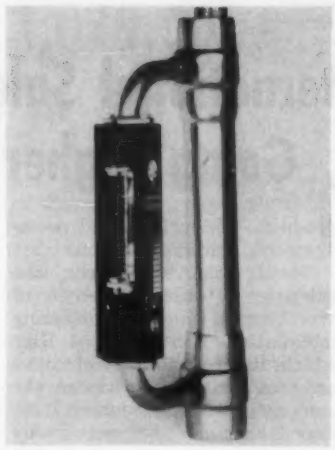
"Burner capacity is actually determined by back pressure developed in the furnace and the model TF-1 burner, for example, which will burn 1,000,000 B.t.u. against .5 in. w.c. back pressure, actually has a maximum capacity of 1,800,000 B.t.u. with a 0.1-in. w.c. negative pressure or draft."

Straight gas, straight oil, or gas-oil combination burners are available in all five basic models. Gas dual-fuel burners are also available.

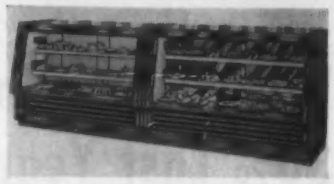
Device Indicates Water Flow In Gpm.

● An improved hydronic device for indicating the flow of water in gallons per minute through a hot water heating or air conditioning installation has been developed by Bell & Gossett Co., Dept. AH&RN, Morton Grove, Ill.

Called the "Thermoflo Indicator," the new device is said to be quiet in operation. Additional advantages were listed as a low pressure drop, never more than two Monoflo fittings, an easy-to-read scale, ease of installation, and versatile mounting.



Sizes of the Thermoflo Indicator range from 1 to 3 in. Capacities in gallons per minute for the various sizes are: 1 in.—1 to 10 g.p.m.; 1¼ in.—10 to 50 g.p.m.; 1½ in.—13 to 68 g.p.m.; 2 in.—20 to 105 g.p.m.; 2½ in.—36 to 180 g.p.m.; 3 in.—60 to 300 g.p.m.



High, Low Temperature Display Cases Match

● Matched self-contained high temperature and low temperature display cases for the bakery, grocery, and delicatessen are offered by Frigid Igloo Mfg. Corp., Dept. AH&RN, 498 Nepperhan Ave., Yonkers, N. Y.

"New glass tops provide the sales clerk clear visibility of customers' selection; avoids opening service doors, thus providing a saving of time and refrigeration."

Available in single units, high or low temperature, only one size 73 in. long, 50 in. high, 36 in. deep, they are finished in white, stainless steel, or color to match present equipment.

'ElectriGas' Refrigerator Offered by Norco

● Announcement of its 1959 "Norcold" gas and "ElectriGas" convertible refrigerators, in 4 and 6-cu. ft. sizes has been made by Norco, Inc., Dept. AH&RN, 5111 West Washington Blvd., Los Angeles 16.

The gas refrigerators, approved by AGA have automatic ice cube release trays, a full-dozen egg rack, automatic controls, "Norco-zip" lighter and dual hinge design which "permits simple reversing of door opening," deep shelves on door, adjustable glide-out shelves, and full-width crisper.

In addition to this, the 6-cu. ft. refrigerator has cross top freezing and an automatic interior light. Models are 594 and 596.

The ElectriGas refrigerators, in addition to the above, are designed to convert from gas to electricity "in just 10 seconds." Model numbers are 594EG and 596EG.

Guaranteed for 10 years, the units are made in three pastel decorator colors and white.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

IMPROVED HYDŌ HOLLOW CONE SPRAY NOZZLES CAN'T CORRODE

Spraying Starts Below ⅓ PSI Injection Molded of "Tenite" (Butyrate)

NOZZLE NO.	IPS	GPM AT 7 PSI	SPRAY ANGLE
H .8	⅛"	.8	60°
H 1.0	¼"	1.15	75°
H 1.8	⅛"	1.8	90°
H 2.5	⅛"	2.5	100°
H 3	¼"	3.3	76°
H 5	¼"	5.0	85°
H 7	¼"	7.0	100°

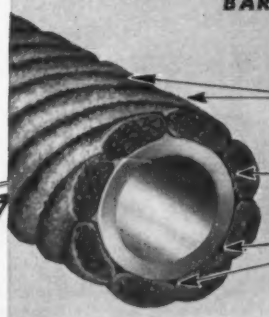
Send $1.00 for 3 trial nozzles

AUSTIN MANUFACTURING CORPORATION
308 Perry Brooks Bldg. Austin 1, Texas

Are You Paying Premium Prices For Your Pipe Wrapping?

Now...cut costs, reduce inventories and *profit* more with the one standard insulation that fits every pipe and fitting, meets *every* service requirement!

THREE INSULATING BARRIERS *in* NoDrip® TAPE



1. OUTSIDE
Rough surface prevents free circulation of moisture-filled air—creates dead air barrier.

2. ¼-INCH THICKNESS
Built-in moisture barrier assures utmost insulating efficiency.

3. INSIDE
Dead air is trapped between "corrugated strands", forms added insulation barrier.

NoDrip Tape means more profit, less work on every job . . . saves you time, labor, material. NoDrip Tape eliminates most multiple wrappings needed with thinner wraps . . . inferior wraps.

Why pay more when you can buy the handy 16 foot roll of ¼" thick NoDrip Tape at less than half the cost of a roll of ordinary ⅛" wrapping...and *far* below the cost of pre-formed foam cellular insulations?

Next time an equipment cold line job calls for *permanent* protection against condensation drip, "sweating" or frost, insist on using NoDrip Tape. Stops rust and corrosion, too . . . holds temperatures more constant and increases the efficiency of the cooling equipment.

NoDrip Tape is pliable, cork-filled and completely self-adhering. Easy to work with . . . forms an air-tight, 100% vapor and moisture proof jacket. Needs no tools, vapor seals, fasteners, brads or adhesives.

NO DRIP PLASTIC COATING... PROTECTION FOR BIG AREAS

Easier to Apply...
EVEN AROUND JOINTS, TEES, VALVES OR ANGLES

For large pipes, tanks, air ducts, we recommend NoDrip Plastic Coating for permanent protection from condensation, rust and corrosion. Another fine Mortell refrigeration product, NoDrip can easily be applied by brush or trowel to metal, concrete, brick, plaster, tile or composition surfaces.

Mortell COMPANY
Makers of Mortite Caulking Cord and Mortite Caulking Gum

J. W. Mortell Company, Dept. 3
649 Burch St., Kankakee, Ill.
O.K.! Send me full information about the complete line of Mortell refrigeration products.

I'm a Jobber____ Dealer____ Serviceman____
Name____
Firm____
Address____
City____ State____

May Double In Decade

Worthington International Sales Soared 30% Last Year, Going Higher This Year

SAN JUAN, Puerto Rico—Hobart C. Ramsey, chairman of Worthington Corp., reported here recently that the company's international air conditioning and refrigeration sales soared 30% last year, are increasing even higher this year, and should at least double in the next decade.

He addressed Worthington distributors from as far away as India and Australia at the firm's second annual international air conditioning and refrigeration conference held at the Hotel San Juan here. The distributors opened a three-day intensive market survey, new product evaluation, and management training session.

During the conference the delegates toured many of Worthington's air conditioning installations in Puerto Rico which Ramsey characterized as an area that demonstrates the amount of air conditioning business that can be gotten by planned market penetration.

The world-wide demand for air conditioning is rising so sharply, he said, that he estimated sales in western Europe alone for commercial, industrial, and residential air conditioning made by all manufacturers will double and may well triple in the next five years.

"Western Europe is 20 years behind the United States in air conditioning today. It will make this up in ten years."

He indicated that part of Europe's anticipated swift rise in air conditioning will come through the abandonment of antiquated architectural restrictions which have inhibited the construction of completely modern structures.

"In France, for example, buildings have been limited by out-moded law to a maximum height of about ten stories," he pointed out. "Just 60 days ago, plans were announced for a 52-story skyscraper to be erected in Paris—completely air conditioned, naturally. In London plans are under way for the tallest building in Britain—31 stories," he said.

"Right now the time is within sight when be can contract for a major air conditioning or refrigeration installation in such a nation as India, for example, and the compressor would be built in a United States Worthington plant; our Italian affiliate would build the condenser; and our air handling unit would come from our Brazilian affiliate. All this would be coordinated by the sales, design, installation, and service know-how of our Worthington distributor in India."

He noted that " . . . the free world is on the march into the future as never before. It is telescoping into ten-year periods what formerly took generations to accomplish."

He said that new standards of air conditioned comfort are a "function of the literacy rates we have on all sides, and of the taste for self-government and for self-improvement that is fast coming to the forefront all over the free world. Air conditioning is the most dramatic and easily understood way, exemplifies this march into the future.

The corporation's 1958 foreign total sales of $50 million for all its products will at least double in the next ten years, he said. This sum represents not only air conditioning sales but also the other items of capital goods which Worthington produces.

Whirlpool International Sales Headed By Voeller

ST. JOSEPH, Mich.—Robert M. Mitchell, Whirlpool Corp. vice president and president of Whirlpool International, announced the addition of Kenneth C. F. Voeller to the latter organization as sales manager.

Voeller will report to Conde Maiden, vice president of Whirlpool International Bahamas, S. A., out of the Nassau office.

From 1950 to 1959, Voeller was with International Standard Electric Corp., the I.T.&T. sales and manufacturing subsidiary overseas.

Success of Automation Gives Ivan Awful Itch For More of Same

MOSCOW, USSR — Over 1.5 million rubles have been saved by automating some 220 refrigeration plants in this Russian Capital.

The advantages of mechanization are so great that "priority attention" is to be paid to increasing labor efficiency and lowering cost per unit output in the next seven year plan, from '59 through '65.

Automation in cold storage plants is expected "to lead to improved storage conditions and a multifold increase in labor productivity."

46 Industry Leaders Support the ARI Seal

THIS UNIT HAS BEEN CERTIFIED AS COMPLYING WITH • ARI STANDARD 210 • AIR-CONDITIONING AIR-CONDITIONING AIR-CONDITIONING ®

The 46 manufacturers listed here are helping to make the ARI program grow daily in value and importance, through the use of the ARI Seal of Certification on the equipment they produce. They're leaders of the industry, accounting for about 90% of total U. S. unitary equipment.*

These are the important names backing the ARI program. And here's what the program does:

1—It takes the guesswork out of a complete system. You can now specify with assurance, because you'll be working with units of assured cooling capacity.

2—It makes your selling job easier. By providing a standard capacity-rating, the ARI program helps dispel confusion for prospective customers.

3—It helps cut down expensive service calls, because ARI-certified equipment means guaranteed performance, backed by the manufacturer, as proven and established under test by the industry.

*"Unitary" air-conditioners: all packaged air-conditioners, whether single units or combined units (called "split" systems) up to 135,000 btu in capacity, but not including room air-conditioners or heat pumps.

For free explanatory booklet and Directory of participating manufacturers, write to: Chief Engineer, Dept. A-6, Air-Conditioning and Refrigeration Institute, 1346 Connecticut Avenue, N. W., Washington 6, D. C.

Airtemp Division, Chrysler Corporation
Amana Refrigeration, Inc.
American Furnace Company
American-Standard Industrial Division, American Radiator and Standard Sanitary Corporation (formerly American Blower Division)
Arkla Air Conditioning Corporation
Armstrong Furnace Company, Division of National Union Electric Corporation
Bryant Manufacturing Company, Division of Carrier Corporation
Carrier Corporation
Cobell Industries Inc.
Columbia Specialty Company, Inc.
Continental Manufacturing Company
Coolerator Division, McGraw-Edison Company
Curtis Manufacturing Company
Day and Night Manufacturing Company, Division of Carrier Corporation
Florida Warren Corporation
Fraser and Johnston Company
Friedrich Refrigerators, Inc.
Frigidaire Division, General Motors Corporation
Gaffers & Sattler, Division of Utility Appliance Corporation
General Electric Company
Gibson Refrigerator Company, Division of Hupp Corporation
Grove Furnace, Inc.
Hall-Neal Furnace Company
International Heater Company
Janitrol Heating & Air Conditioning Division, Surface Combustion Corp.
Lennox Industries Inc.
The Majestic Company, Inc.
The Mathes Company, Division of the Glen Alden Corporation
Miami Products, Inc.
Mueller Climatrol, Division of Worthington Corporation
National Thermatic Corporation
National—U. S. Radiator Corporation
The Payne Company, Division of Carrier Corporation
Peerless Corporation
Perfection Industries, Division of Hupp Corporation
Rheem Manufacturing Company
Round Oak Company of Indiana, Inc.
A. O. Smith Corporation
Southwest Manufacturing Company
Therm-Air Manufacturing Company
The Trane Company
Typhoon Air Conditioning Company, Division of Hupp Corporation
United States Air Conditioning Corp.
Westinghouse Electric Corporation
Worthington Corporation
York Corporation, Subsidiary of Borg-Warner Corporation

SIGNS OF QUALITY & SERVICE

Relays, Contactors, Oil Capacitors and Leak Detectors

for Refrigeration and Air Conditioning

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Authorized Factory Distributors

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Relay Division

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Omaha Firm's New Name Is Standard Metal Fabricating

OMAHA, Neb. — Standard Furnace Supply Co., Ltd. of Omaha has changed its name to Standard Metal Fabricating Co., according to J. W. Hennen, president.

The new name more closely identifies the firm with the type of work in which it is engaged, Hennan said.

Officers of the firm, in addition to Hennan, are Roy C. Brainard, vice president in charge of sales; Herbert Q. Urbach, vice president in charge of manufacturing; James J. Fitzgerald, Jr., treasurer; and James H. Holmquist, secretary.

"For many years, beginning in 1911, the firm supplied the dealer trade with furnaces, metal products, and heating accessories," it was noted.

"In recent years this function was discontinued and all activity has been directed to the fabrication of metal products used in the home building industry including pipe, elbows, duct and fittings for heating and cooling, as well as rain-carrying equipment—all of which are sold exclusively to wholesalers."

It was announced also that substantial additions to facilities are now under way including a building expansion program as well as a number of new mass production processes. The building addition now under construction adjoins the present plant located at 7311 Jones St.

The announcement stressed the modern manufacturing processes, raw material storage, and efficient warehousing employed by the firm.

Among its products, the firm pointed out, are the "Clix-On" takeoff fitting and a patent-applied-for snap-in dampering device for ceiling diffuser outlets.

Crackdown by City Leads To 8 Firms Leaving Town

HAMILTON, Ont., Can. — Eight heating firms left town last year after city departments stepped up enforcement of permit bylaws, according to the building department report for 1958.

Thanks were expressed to J. B. Chamber and R. Gaasenbeek of the city solicitor's department for the cooperation in court cases.

In September, the report stated, Chief Clerk D. R. Hunter was instructed to proceed with legal action in cases where permits had not been obtained for heating installations.

Convictions were obtained in 29 of the 30 charges laid and $603 paid in court fines and costs. The other charge was withdrawn.

"As a result of the persistent action against the offenders . . . eight heating firms closed up their operations and left the city," the report stated.

"There has also been an additional increase of 500 permits for October, November, and December from firms who have not consistently obtained permits in the past."

AGA Says Gas Utilities Added 1,079,000 Residential Heating Customers In '58

NEW YORK CITY—The nation's gas utility companies added 1,079,000 new residential heating customers during 1958 and increased the number of gas-heated homes by 6% to establish a record total of 19,003,000, the American Gas Association reported.

Nearly 65% of all residential gas customers now heat their homes with gas, a gain of 2.4% from 62.6% a year ago.

The gas trade association estimates that 4 million new gas house-heating customers will be added during the next three heating seasons. New homes are expected to account for 2.3 million, or nearly 60%, while conversions from other fuels will account for the remaining 1.7 million, it says.

AGA noted that the new figures represent dwelling units rather than units of gas heating equipment. Many homes utilizing wall furnaces, space heaters, or floor furnaces employ more than one heating unit.

The AGA report also excludes homes heated by LP (bottled) gas and dwelling units in apartment houses or other multiple-family structures heated by central systems.

"More than one-quarter of the new heating customers the gas industry expects to add during the next three years will be located in the east-northcentral area where 1.1 million new installations are anticipated," the AGA report said. "This area includes Illinois, Indiana, Michigan, Ohio, and Wisconsin.

"The rapidly-growing Pacific region, covering California, Oregon, and Washington, will rank second, with an estimated 628,000 additions. The middle Atlantic states of New York, New Jersey, and Pennsylvania will add 526,000 new heating customers by the end of the 1961-62 season."

AGA reported that the South Atlantic area has moved into fourth place among regions in which the industry expects the largest growth in house-heating. A new heating equipment market is opening in Florida.

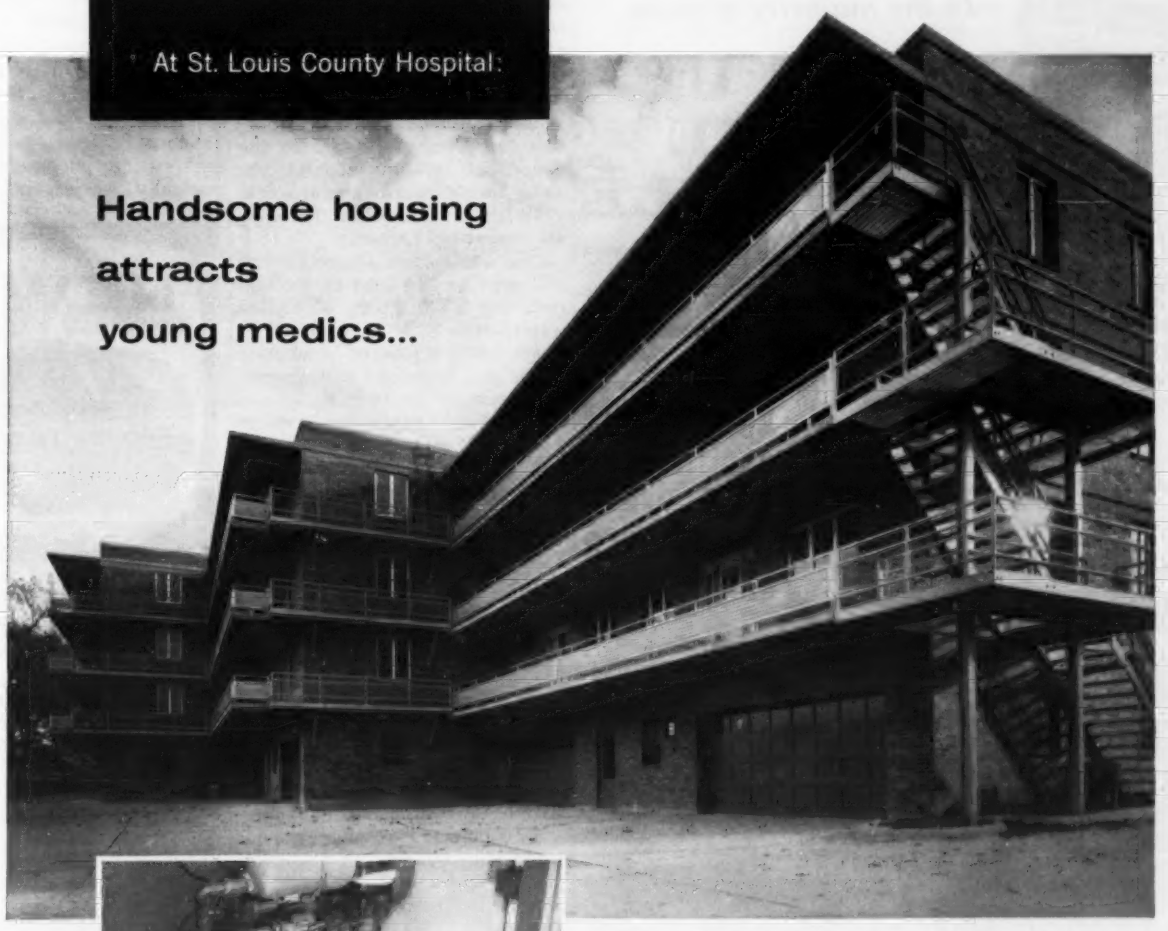
Florida, which now has approximately 105,000 gas heating customers, will gain an estimated 148,000 new heating customers during the next three years, it was stated.

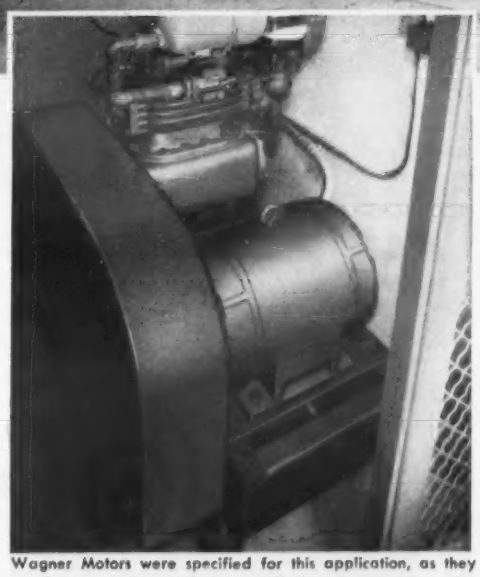
The largest gain in any single states is expected in California "where an estimated 552,000 additional dwellings will use gas heat by the end of the 1961-62 season. Illinois will rank second with 398,000 new installations, Michigan will be third with 292,000, and New York and Ohio will tie for fourth place with 258,000 each.

Complete or partial restrictions on the installation of new heating equipment still were in effect for 53 utilities at the end of November, 1958, according to AGA. These companies, serving 5.3 million households throughout the country, represent 18.6% of the industry's total residential customers. A year ago, 55 companies serving 18.8% of the nation's residential gas customers reported some restrictions.

At St. Louis County Hospital:

Handsome housing attracts young medics...





Wagner Motors were specified for this application, as they are for many air conditioning installations, because they give smooth, dependable power.

Designed to attract a larger number of medical school graduates to the St. Louis County Hospital intern program, this striking 18 family apartment building offers comfortable rent-free housing to interns, resident physicians and their families.

This new structure is actually three buildings, each with a central air conditioning unit. The compressors are driven by Wagner polyphase motors. These power-packed motors start compressor loads smoothly and easily, are small in size, light in weight—easier to install and maintain.

Whatever your motor requirements may be, Wagner can supply you a standard motor or build a special motor to fit your need. Constant research and development have kept Wagner up front in electric motor design for more than 65 years—made the name Wagner one you can trust in choosing motors for your plant or for your product. Call your nearby Wagner field engineer for an engineering analysis of your next motor application. There are Wagner branches in 32 principal cities.

WH59-3

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

Wagner Electric Corporation

6441 PLYMOUTH AVENUE, ST. LOUIS 14, MISSOURI

LIVE BETTER ELECTRICALLY

SERVING 2 GREAT GROWTH INDUSTRIES . . . *ELECTRICAL . . . AUTOMOTIVE*

Three-Pipe System

Boston Statler-Hilton Is First To Use York System That Delivers Hot, Cold Water Unmixed to Room Unit

BOSTON — First installation of York Div., Borg-Warner Corp.'s new three-pipe "Hi-I" air conditioning and heating system is currently being made in the Statler-Hilton hotel here.

By July 1, some 490 of the 1,300 guest and sample rooms in the hotel will be air conditioned, according to present schedules. The hotel plans to stage an open house and switch-throwing ceremony then.

Remaining rooms will be air conditioned at the rate of 50 per week so that the entire job will be done in the fall.

The new three-pipe Hi-I system consists of three pipes running to each high pressure induction unit in each guest room. One pipe carries hot water, one cold water, and the third acts as a common return.

Provides Quick Temperature Selection

With this system, each unit is equipped with a newly developed automatic control valve. Depending upon the requirements of the room, as indicated by the thermostat, the valve will modulate the flow of **either** hot or cold water. Unlike the usual three-way valve, there is no mixing of both hot and cold water in the valve.

Therefore, this system achieves control by supplying either heating or cooling as desired, rather by continually bucking heating with cooling.

York claims that this feature not only greatly reduces operating cost, but also, with both hot and cold water continually available, provides guests with the means of quickly and uniformly selecting any temperature they like.

Primary air system provides 100% fresh air to each room. There is no return air system.

The Boston Statler-Hilton installation, using the existing steam supply, will supply more than 800 tons of cooling and 7,714,000 B.t.u.h. of heating.

Refrigeration is supplied by a combination system using a centrifugal water cooling system driven by a non-condensing steam turbine which exhausts all of its steam into the absorption system generator.

The steam turbine acts as a pressure reducing device to provide low pressure steam to the absorption system and at the same time perform useful work. This further improves the overall operating economy.

The absorption chiller system will provide 574 tons of cooling, reducing 1,725 g.p.m. of chilled water from 53.3° F. to 45.3° F. Some 1,800 g.p.m. of condenser water will be raised in temperature from 85 to 106° F.

The York centrifugal water chiller will provide an additional 238 tons of refrigeration, further reducing the chilled water temperature from 45.3° F. to 42° F. Condenser water—714 g.p.m.—will have a temperature rise of from 85° F. to 95° F.

Pumps on Third Floor

Because of the location of existing equipment rooms, the refrigeration systems are located in the basement and the pumps are located on the third floor. Guest and sample rooms served by the system range from the fourth to 14th floors.

Two primary air systems, located side by side on the roof, provide a total of 71,593 c.f.m. of air. No zoning of air is required.

The fans were selected to circulate ventilation quantity of outside air against the total system static pressure. Fan operation is particularly stable since air temperature and consequently its specific volume is relatively constant.

There are no steam reheaters required for the air system. This represents an appreciable saving in initial cost and space required for coils, controls, piping, and insulation.

In winter the air, after filtering, is preheated to a temperature of about 40° F. to safeguard against freezing. In summer, it is cooled for dehumidification purposes only and normally leaves the dehumidifier coil at about 48° F. Thus temperature of supply air is relatively constant the year round.

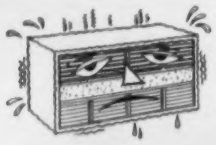
Air is supplied in relation to the ventilation requirements of each guest room to balance the air removed by the existing bathroom exhaust system.

In addition to providing ventilation, the primary air also provides the motive force necessary to circulate room air over the induction unit coils.

Since induction units do not have fans, they must rely upon the induction effect of primary

Statler-Hilton Hotel Boston, Massachusetts

Heating Load:	7,714,000 BTU/HR	
Converter:	900 GPM - 115° to 140°/ Steam @ 10PSI Capacity 11,300,000 BTU/HR	
Pre-Heat Coils:	Glycol 71,393 CFM 0° to 50° = 3,860,000 BTU/HR	
Primary Air Systems:	East System	34,395 CFM
	West System	37,198 CFM
		71,593 CFM
Absorption System:	574 Tons	
Chilled Water	- 1725 GPM 53.3° to 45.3° F.	
Condenser Water	- 1800 GPM 85° to 106° F.	
Turbo System:	238 Tons	
Chilled Water	- 1725 GPM 45.3° to 42° F.	
Condenser Water	- 714 GPM 85° to 95° F.	



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No matter what make or size motor you find "down" on your next room air conditioner service call, you can be reasonably sure that Fasco R51A will match it. The ideal replacement motor for most room units in service today, the versatile R51A handily doubles for a variety of specific motors. Having one along on service calls usually saves valuable time now wasted chasing same name substitutes and eliminates time-consuming call-backs.

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3. Choice of 115 or 230 volt models.
4. R51A Motor has 4" shaft extension on each end; ½" shaft diameter. Shaft height is 3". This height may be increased by shimming if necessary.
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*1500 R.P.M. Motors also available.
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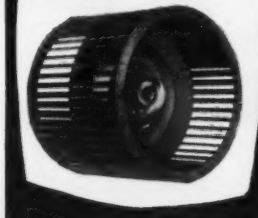

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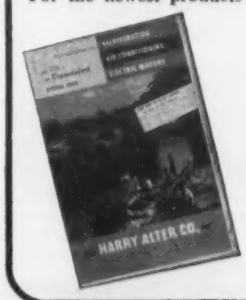

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FREE PARKING AND FAST COUNTER SERVICE AT THESE 4 BIG WAREHOUSES

air passing through nozzles to induce the flow of room air through the unit coils.

Quantity of room air circulated depends upon the efficiency of the induction unit and upon the quantity of primary air.

Induction units are located under windows in guest rooms. In sample rooms, where tables and equipment displays might block the unit, they are located on the ceiling.

Each coil is also supplied with a condensate pan connected into the existing steam return lines which formerly served the radiators.

Individual thermostatic controls are located on every unit in the guest rooms. This minimizes and simplifies the required controls at the system.

The Boston hostelry is the fifth Statler-Hilton hotel York has air conditioned.

"It was initially planned to put a two-pipe induction system in the Boston Statler-Hilton," a York official declared. "When the new three-pipe Hi-I system was announced last January, the Hilton people took York's recommendation on the basis of our four previous experiences in air conditioning Hilton hotels.

"This factor of experience was further reinforced by the demonstrated savings on both first cost and operation cost of the three-pipe system.

"In addition to its complete flexibility, the three-pipe Hi-I system represents a 15 to 25% reduction over comparable operating costs. In a hotel this size, these savings can amount to a considerable sum each year.

Joseph P. Binns, vice president in charge of the eastern division of Hilton Hotels Corp., pointed out that "we spend about 10% of every dollar which comes into the hotel for repairs, maintenance, and capital improvement to the property.

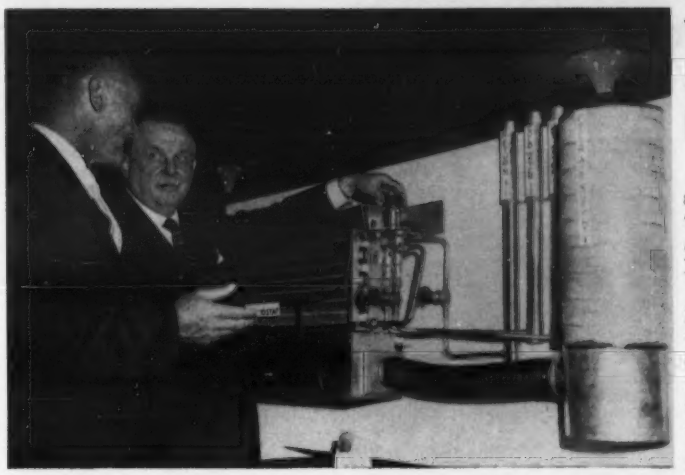
"We did $220 million of business last year. This year we will spend on this particular air conditioning project a great deal more than 10% of our budget."

There are 58 mechanics working on the installation. A great many parts of the system are assembled in the basement and then quickly installed into guest rooms, thus minimizing loss of guest room revenue by the hotel.

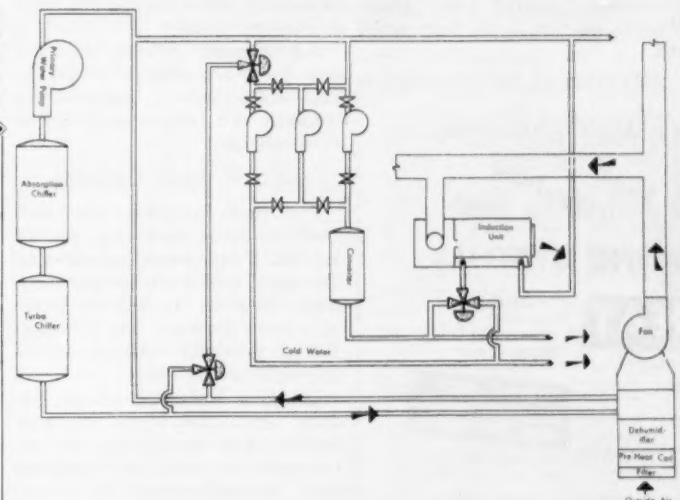
Jaros Baum & Bolles of New York City are consulting engineers on the project. C. H. Cronin Co. of Boston are mechanical contractors and Harrington Bros. of Medford, Mass. are sheet metal constructors.

P. S. Thorsen Co. of Boston is providing the insulation and Minneapolis-Honeywell Regulator Co. the controls.

Public rooms of the hotel had previously been air conditioned.



EXPOSED UNIT of three-pipe Hi-I system now being installed in Boston's Statler-Hilton hotel is examined by J. J. Floreth, vice president of York Div., Borg-Warner Corp. (l.) and D. B. Stanbro, manager of the 1,400 room hotel.



SIMPLIFIED SCHEMATIC diagram of the three-pipe system as installed in the Statler-Hilton. It supplies either heating or cooling as desired. There is no mixing of water in the valve.

12,000th Student Enrolls for IBR Hydronics Course

NEW YORK CITY—A Minneapolis plumbing-heating contractor was acclaimed recently as the 12,000th student of the I-B-R school.

Contractor Richard Bowler of Bowler Plumbing & Heating received a special certificate from the Institute of Boiler & Radiator Manufacturers in recognition of the milestone established when he signed up for the institute's industry-sponsored three-day course in modern hydronic heating and cooling techniques.

Bowler was among the 78 students — contractors, wholesalers, and manufacturers' representatives — who traveled as far as 300 miles to attend the Minneapolis School April 7-9. This was one of the 26 I-B-R hydronic schools scheduled for 1959.

The firm of Bowler Plumbing & Heating was founded 50 years ago by Bowler's father, who currently is president of the contracting firm.

Schedule of remaining 1959 I-B-R Schools has been announced as follows:

Harrisburg, Pa., June 9-11; Newark, N. J., June 16-18; Springfield, Mass., June 23-25; Spokane, Wash., July 14-16; Seattle, Wash., July 21-23; Portland, Ore., July 28-30; Denver, Aug. 11-13; Lincoln, Neb., Aug. 18-20; Ames, Iowa, Aug. 25-27.

Welbilt Sales Hit $6 Million In 4 Mos.

NEW YORK CITY — A. P. Hirsch, chairman of Welbilt Corp., reported at the annual meeting that the company's sales in the first four months of this year totaled $6,016,555, compared with $5,098,253 in the like year-ago period.

He also reported that earnings rose high enough from a poor first quarter that net income in the first half of 1959 should be as good, if not better, than net income in the first half of last year. In the first six months of 1958, the company earned $479,795, or 11 cents a share, on sales of $9,134,601.

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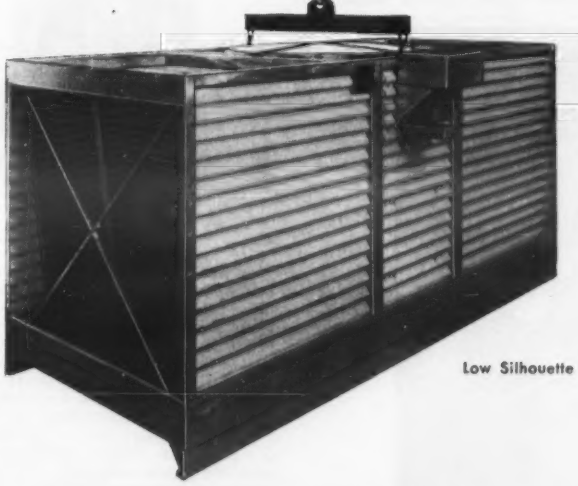

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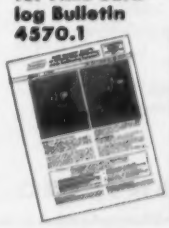

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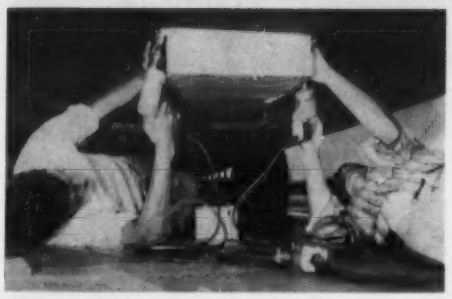
Rigid Urethane Foam Is Duct and Insulation In Under-Floor Air Duct for Use In Mobile Home Heating, Cooling System

DAYTON — Rigid urethane foam is both duct and insulation in a new under-floor air duct said to be an exceptionally efficient means of heat distribution for mobile homes.



SCREWS are driven right through the lip of the 30-lb., 33-ft. duct to secure it to the underside of a mobile home.

HEAT LOSS LESS THAN 6%

Heat loss from the source to the outlets is less than 6%, even though the full length of the 33-ft. duct is exposed to outside weather, it is claimed. The ¾-in. thick duct is equally efficient when used as an air conditioning system with cold air, according to the manufacturer.

The ducts, which carry warm air from a central heating system to floor registers the full length of a 50-ft. mobile home, are manufactured by the Kormac Panel Div. of Southwestern Mobile Homes, Inc., Grand Saline, Texas. The material is Dayton Rubber Co.'s "Stafoam" urethane, poured in place. Weight of the 33-ft. duct is 30 lbs.

Efficiency of the new duct is attributed by the manufacturer to the low K factor (.20) of the Stafoam and to an aluminum foil inner lining "which offers minimum interference to the movement of air."

Advantages claimed for the new ducts are absence of crackling noise during temperature changes and partial muffling of road noises.

DUCTS ARE 3-SIDED

The ducts are three-sided and made with a mounting lip all around. They are attached with the open side next to the insulated floor of the mobile home by screws through the lip. Gasketing prevents leakage of air through the jacket.

Integral construction of the duct "eliminates leaky joints or bends that cause loss of air pressure as well as temperature," it was stated.

"The new duct, 4 in. by 15 in. in cross-section, is easily constructed with inexpensive, home-built tools," it was explained. "A female mold is lined with kraft paper, then liquid Stafoam components are mixed and poured into the lined mold. A male mold covered with aluminum foil is placed over the foaming mix to produce a uniform ¾-in. wall thickness.

"In foaming, the Stafoam bonds itself to the aluminum foil and the paper, producing a shaped structural sandwich. The foil and paper prevent adhesion of the foam to the mold."

Zinc Soldering Process for Aluminum May Broaden Use of Light Metal

PITTSBURGH—A zinc soldering process for joining aluminum to itself and other metals today is expected to broaden greatly the light metal's use in the refrigeration, air conditioning, and other industries, according to Aluminum Co. of America.

Exhaustive tests by Alcoa "indicate the zinc technique offers the best method for making sound, corrosion-resistant soldered joints," it was stated. Alcoa engineers also found the process to be superior to brazing for several applications.

The basic technique is not new—in fact, is the oldest means known for joining aluminum. the announcement noted. But Alcoa research engineers believe its merits have never been fully appreciated because the process cannot be completely successful unless proper procedures, solders, and fluxes are used.

"When employed with specially developed Alcoa joining products, the zinc soldering process is especially suited to bonding thin complex sections, including heat exchangers of all types," it was pointed out.

"Other promising applications, indicated by recent research, include metallurigical bonding of aluminum spirally wrapped or plate fins to aluminum, copper or steel tube, and bonding socketed tube joints and dissimilar metal transition joints.

"Test results evidenced that zinc soldered socketed tube joints, exposed to extremely corrosive atmospheres for periods up to a year, showed little or no damage as a result of corrosion.

"Tensile, hydrostatic, and fatigue tests on aluminum soldered to copper tube showed the joints to be stronger than those made by conventional processes. Finally, aluminum-to-aluminum socketed tube joints displayed greater strength than the tube itself."

Alcoa engineers also noted the process's "potential advantages over brazing. The fluxes used are less expensive than brazing fluxes, and are simpler to remove after soldering. Zinc soldering also permits the joining of aluminum to copper."

Alcoa now is making a complete line of materials necessary to zinc solder aluminum.

The company advises the use of Alcoa No. 81 or 82 soldering sheet, No. 805 solder, and No. 66A or 67 flux, to perform the zinc soldering process effectively. In certain applications only the flux need be used in making assemblies where one of the joint components is aluminum.

A COMPLETE, SIMPLE METHOD FOR
PREVENTING SCALE CORROSION SLIME
IN AIR CONDITIONING SYSTEMS

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Metro EZ Treat is a one-package treatment with triple chemical action to prevent scale, corrosion, and slime. Protects your expensive equipment all season long.

Metro EZ Treat is the answer for owners and operators of 5-to-50 ton units who want an effective, easy-to-use water treatment complete in one package.

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JUST PLACE THIS FEEDER-CAN INTO PAN OF EVAPORATIVE CONDENSER OR COOLING TOWER

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THE PACKAGE HOT WATER SYSTEM
FOR THE FOOD SERVING INDUSTRY.

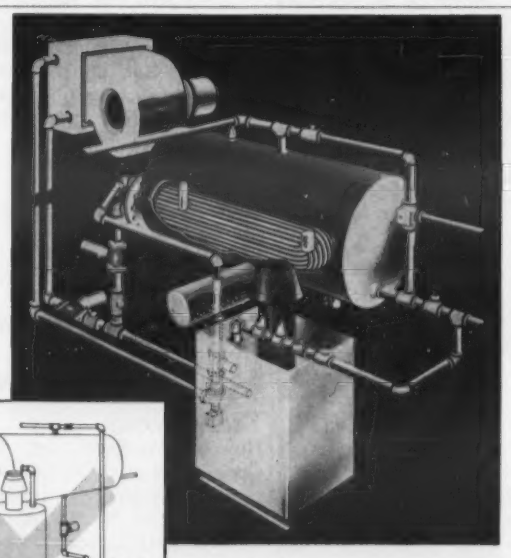
Provides water at **200°** *for space heating,*
180° *for sanitary rinse,*
140° *for general purpose*

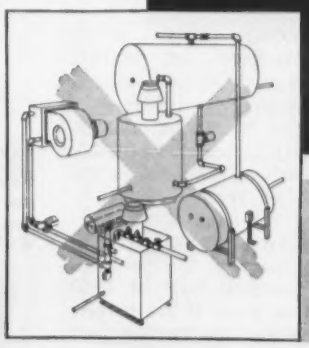
from a single **RAYPAK** *gas fired boiler*

Saves up to 40% in original equipment and installation costs – slashes maintenance expense – a superior indirect system – Raypak boiler guaranteed for 20 years.

As only one boiler, one vent and one gas line are required there are important savings in equipment and installation costs. The Tri-Temp System saves a great deal of space, an important factor in the food serving business. The Raypak Tri-Temp System is available in a wide range of sizes and capacities.

The Raypak Dual-Temp System is identical to the Tri-Temp System and is available for installations where there already exists central heating.





In the old style system a much larger storage tank wastes space and doubles cost. The obsolete method directly heats raw main water with resultant scaling and corrosion, with extremely high maintenance and replacement expense on the water heater and high temperature booster.

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® Engineers-Manufacturers · 2416 CHICO AVENUE, EL MONTE, CALIFORNIA

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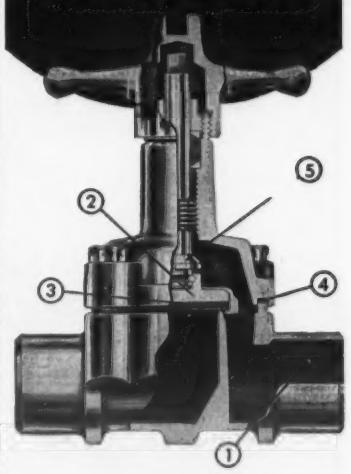

"Packed" with quality and of rugged brass construction, these valves are ideal for refrigeration and air conditioning systems, oxygen (degreased), nitrogen, compressed air and liquified petroleum gases. Features: 1. Designed for full flow. 2. Floating disc for self-adjustment. 3. Quick seating disc for ease of operation. 4. Leakproof with exclusive gasketing. 5. Repacks under pressure with positive back seating. Maximum operating pressure 500 p.s.i.—maximum temperature 200° F. See your Kerotest wholesaler.

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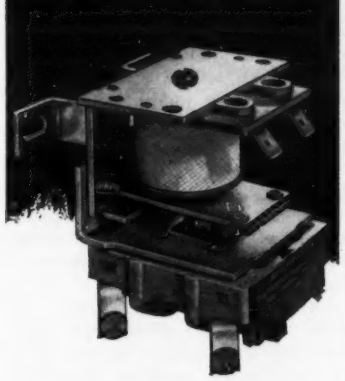

FOR AIR CONDITIONING COMPRESSORS

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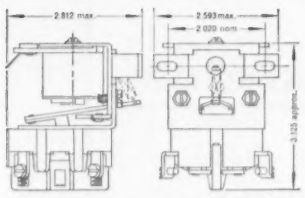

SPECIFICATIONS

Contact rating	25 Amp. continuous, 150 Amps. inrush at 250 volts
Contact terminals	Screw type
Coil terminals	Quick connect, Lead wires (14")
Coil rating	24, 120, 208, 240 Volts — 60 cycle
Pole arrangement	2 pole N.O only

Consult your RBM Product Application Engineer or Write for Bulletin C-10.

RBM CONTROLS DIVISION

ESSEX WIRE CORPORATION

Logansport, Indiana

FACTORIES: Peru, North Manchester and Logansport, Indiana

Combustion In the Heating Industry--

(Concluded from page 1)

history of catalytic combustion, or as he preferred to call it, "catalytic-surface combustion," were reviewed by Dr. Walter Ross of National-U. S. Radiator Corp.

In the presence of a catalyst or an incandescent surface, combustion producing heat takes place apparently without flame, explained Dr. Ross, adding, however, that the most recent theory advanced by Russian experts claims that actually extremely small "microflames" are involved in the process.

A research and development program, which might require as little as 36 months and $135,000, was also outlined and proposed by Dr. Ross.

Two working models which demonstrated high and "low" temperature catalytic-surface combustion were on display in the laboratory.

Current Research on Fuel Cells Described

Current research on fuel cells was described by Dr. Everett Gorin of Consolidation Coal Co.

Production of electricity from fossil fuels directly without going through the conventional thermal cycle theoretically offers 100% efficiency, "but much work remains to be done before it's commercially practical," Dr. Gorin said.

Problems still to be solved include insuring long cell life, reducing cell cost, improving current output, and cutting fuel cost, he indicated.

"We are perhaps in the ratio of 3 to 5 for cell life and current output," Dr. Gorin estimated.

As now envisioned, a single fuel cell would produce 0.75 to 1 volt, and thus many would be required to obtain common voltages.

Burner Performance

Burner performance as related to fuel oil properties was discussed by R. C. Wright of Iron Fireman, J. G. Partch of Standard Oil (Ohio), and R. P. Gilmartin of Gulf Research.

Instability of No. 2 oil, most widely used for residential and small commercial burners, was cited by Wright as a definite problem, and he suggested that some sort of physical change, perhaps occurring in the customer's tank, seems to result in gums and semi-solids.

Tighter specifications for No. 2 oil, would, however, probably increase its cost, cautioned Partch.

Recommend Lower Oil Pressures

Discussing atomization of liquid fuels, E. A. Olson of Delavan Mfg. Co. recommended development of burners and furnaces that would operate at lower oil pressures than the conventional 100 p.s.i.g.

Operating at lower pressures would give larger oil droplets and permit larger openings in the spray nozzle, thus resulting in less trouble due to nozzle clogging, he said.

Research toward standardization of oil filters used ahead of the burner was recommended by John A. Bolt of Standard Oil (Indiana).

"Some filters are good, but some are very coarse, catching only nuts, bolts, and rocks," he complained.

Problems of mixing fuels and air for combustion were discussed by A. A. Putnam, Battelle Memorial Institute; W. B. Kirk, American Gas Association, and Richard G. McCafferty, National Aeronautics and Space Administration.

Describing research of combustion involved in turbojet and ramjet engines, McCafferty pointed out that the stability of flame was affected by conditions in the zone immediately at the flame, not by average conditions throughout the burning area.

Some experiments have also indicated, he revealed, that an electrical field surrounding a flame can improve the flame's stability. The electrons given off by the field apparently are a controlling factor, he explained.

Air pollution aspects of combustion were discussed by Wesley C. L. Hemeon, Pittsburgh consulting engineer, who noted that the postwar shift from coal to other fuels has sharply reduced one cause of air pollution in many communities.

The conference discussions were summarized by L. N. Hunter of National-U. S. Radiator. M. W. McRae, Crane Co., was chairman of the conference, and Burgess H. Jennings, ASHRAE research director, made the keynote address.

Detroit Heating Group Plans Name Change

DETROIT — The Detroit Warm Air Heating Association recently notified members that it intended to change its name to Detroit Heating & Air Conditioning Association.

Jay Biddle, secretary, said the change was recommended by the board of directors at a special meeting on March 25.

The association will meet June 10 in Parkside Hall, 3119 Fenkell Ave. At that time, H. R. Stevenson, manager of sales for the Detroit Edison Co., will tell the "Electric Heat Story."

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desires American License or Franchise for the production and sale of similar products in Germany. We offer an opportunity for investment in our present organization, and to interested parties our financial participation toward the establishment of an American subsidiary company to secure a firm foothold in the Common European Market can be considered.

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116	.064	.125
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POLO PRODUCE CO.

eliminates ceiling frosting and slugging hazards

Here's how Krack Automatic Electric Defrost Unit Coolers save time, trouble and temperature . . . The door on the unit automatically closes for each defrost cycle and energizes the heaters while blowers circulate the warm air within the insulated cabinet. Heat, held within the unit, isn't released into the freezer room to create frost. When defrosting is complete, the heat shuts off, the door opens and the refrigerating cycle is automatically resumed without affecting room temperature.

Engineers and contractors find these Krack defrost units cost less to install and require less maintenance.

Send coupon—for performance-packed bulletin today!

KRACK REFRIGERATION APPLIANCES, INC.

Manufacturers of freon, ammonia, flooded ammonia heat transfer equipment

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Send free bulletin giving all technical details.

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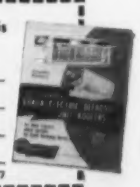

Death Notices

MIAMI, Fla.—J. Frank Vann, 78, owner of Commercial Refrigerating Equipment Co. here, died May 24.

• • •

CLEVELAND — Harold A. Sheehan, 53, president and general manager of Alco Refrigeration Sales & Service, Inc., died recently of a heart ailment at Euclid-Glenville hospital. He had been in the refrigeration business 37 years.

• • •

KANSAS CITY, Mo.—Michael J. Hynes, 68, who retired five years ago as a refrigeration engineer, died recently in St. Luke's hospital after a long illness.

• • •

LYNN, Mass.—Ivan C. Sutherland, executive secretary, Oil Heat Institute of New England, and of New England Fuel Merchants Association, died recently. He had been ill earlier this spring, but was believed to be on the mend when death struck.

NAFFP Moves Office

WASHINGTON, D. C.—Headquarters of the National Association of Frozen Food Packers have been moved from 1415 K St., N. W., in Washington, to 919 18th St., N. W.

Region 5 Wholesalers Spring Meeting Set For June 18-20

CLEVELAND — The annual spring meeting of Region #5, Air Conditioning & Refrigeration Wholesalers, will be held June 18-20 at the French Lick-Sheraton hotel, French Lick, Ind,. it was announced here.

The meeting will be under the chairmanship of Tom Jordan of Jordan Supply Co., Buffalo. Theme of the meeting is "Dilemmas, Plus and/or Minus." It embraces several topics of interest to the wholesaler and the manufacturer.

Joint meetings will be held Thursday and Friday mornings. The Saturday session will be a wholesalers business meeting.

Region #5 is the area comprised of Michigan, Indiana, Ohio, Kentucky, West Virginia, and western portions of New York and Pennsylvania.

Salt Lake City Group Elects Raymond F. Hilton

SALT LAKE CITY — Raymond F. Hilton, Salt Lake City, was elected president of the Utah Plumbing & Heating Contractors Association during the 37th annual convention here. He succeeds Harold H. Christiansen, also of Salt Lake City.

Schweich Elected President at Lewin-Mathes

NEW YORK CITY—Edward F. Schweich has been elected president of the Lewin-Mathes Co., division of Cerro de Pasco Corp., it was announced by Robert P. Koenig, Cerro president.

Schweich

Schweich succeeds Richard H. Lewin, who last months was appointed vice president of Cerro de Pasco with responsibility for domestic non-ferrous metal fabricating operations.

Schweich's appointment as chief executive of Lewin-Mathes comes almost 30 years to the day from his first employment by the company on June 1, 1929. Throughout most of his association with Lewin-Mathes, he served as secretary of the company, and late last year was promoted to executive vice president.

Lewin-Mathes is a copper refiner and producer of copper and brass tube, pipe, and rod, with headquarters in St. Louis and plant facilities at Monsanto, Ill.

Standard Steel Buys Cambridge Assets

LOWELL, Mass. — Standard Steel Corp. has concluded negotiations with Carrier Corp. to acquire the assets of Cambridge Co., of Lowell, it was announced recently.

Effective June 1, the latter company became an operating division of Standard Steel. No purchase price was made public.

In announcing the acquisition, Robert S. Burns, president of Standard Steel, stated: "The basic motivation behind our investment in Cambridge Co. is to integrate the engineering know-how and background of Cambridge in the cryogenics field with the manufacturing techniques of Standard Steel.

"It is our intention to continue the operation in Lowell and to supplement present areas of activity with manufacture of certain proprietary items."

Standard Steel has headquarters and manufacturing facilities in Los Angeles and a plant in Decatur, Ill.

Fedders Licenses Canadian Firm To Make Room Units

TORONTO, Ont., Can.—General Steel Wares, Ltd. announced that it will manufacture, at its London, Ont. refrigeration plant, a full line of room air conditioning units under an exclusive licensing agreement with Fedders Corp. of Maspeth, N. Y.

S. J. Randall, president of General Steel Wares, said production of the air conditioners will create a new division of the company.

Kensico Outlet In New Quarters

PHILADELPHIA—The Max-Arnold Co., local industrial supply firm, at an open house attended by 600 area architects, engineers, contractors, and plumbing and heating wholesalers, unveiled new quarters at 2201 W. Glenwood Ave. which doubles its former warehouse and office space.

According to Arnold Weinstein, president of the firm which ranks as the country's largest distributor of Kensico copper tubing, the move to new and larger facilities was dictated by need for company expansion predicated on current market indices which forecast an area building boom.

The new building, a one-story structure with brick exterior, provides 13,000 sq. ft. of warehouse and office space. It is equipped with loading dock and overhead crane system for modern materials handling.

Fully stocked, the new warehouse can accomodate up to 1,000,000 lbs. of finished copper in varying weights and sizes ranging from ¼-in. to 6-in tubing, Weinstein said.

As Kensico distributor, the firm services plumbing and heating wholesalers in an area encompassing eastern Pennsylvania, southern New Jersey, Delaware, Maryland, and the District of Columbia.

SEND FOR REPRINTS

"ELECTRICAL CHARACTERISTICS OF PACKAGED AIR CONDITIONING UNITS."

Only 25¢ each.

For your copy, clip this ad and mail with name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

PEERLESS REDI-PAK PUMPS: FROM WAREHOUSE TO DEALER, OVERNIGHT!

That's right! Peerless has individually sealed and packaged 22 sizes of pumps from its famous end-suction Fluidyne line, in popular sizes from 1 to 15 hp. These versatile, efficient pumps will handle virtually any general purpose pumping requirements. Their clean, compact design means a made-to-order fit in any piping or pumping layout. Their rugged, built-to-last construction makes them ideally suited to installation indoors or out, to duty that's continuous or intermittent. You name the job and there's a Peerless REDI-PAK to handle it. There's performance for your customer and profit for you in the Peerless REDI-PAK line. Write for full information.

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Putting Ideas to Work

Peerless Pump Division

Plants: Los Angeles 31, Calif. and Indianapolis 6, Ind.

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No matter what type heating system . . . or even if there is none . . . you can rely on WILLIAMSON Air Conditioning to solve your cooling problem and increase profits. Choose from 8 different types, easy to install anywhere . . . thru wall or transom, in basement, crawl space or attic, on the roof, entirely inside or outside . . . with or without ducts.

2, 3, 4, 5, 7½ & 10 ton air cooled units

Write for complete information today!

THE WILLIAMSON COMPANY

3320 Madison Rd. Cincinnati 9, Ohio

Refrigeration Problems And Their Solution

(As Written by Paul Reed)

Auto Air Conditioning Problem

QUESTION:

I have a problem on automobile air conditioning. The model involved uses a constant pressure valve installed in the suction line, and an automatic expansion valve feeding from the liquid off the condenser and expanding into the suction line between the CP valve and the compressor. The CP valve is set at 30 p.s.i.g., and the automatic expansion valve is set for 15 p.s.i.g., and is used to reduce the capacity of the compressor.

In your opinion, would it be possible to eliminate the CP valve, and set the automatic expansion valve at about 28 or 30 p.s.i.g., and get the same operating results?

ANSWER:

Your question is quite interesting in that the existing system that you describe is somewhat unusual. Constant pressure valves are, of course, widely used in refrigeration work, especially on jobs requiring two evaporators to be carried at different temperatures on the same machine.

Constant pressure valves are also used quite widely in liquid cooling to prevent the evaporator temperature from ever going below the freezing point of the liquid —water, milk, or beer—in contact with the evaporator.

WHAT CP VALVE DOES

The purpose of the CP valve in the described system is to maintain a minimum temperature of the evaporator—about 32° corresponding to 30 p.s.i.g., thus preventing frost accumulation on the evaporator—regardless of the variation in load and/or the capacity of the compressor.

However, the CP valve does not prevent the evaporator temperature from rising above 32° if the load increases more than the capacity of the compressor at 30 p.s.i.g.

In both of these respects, the CP valve seems to be duplicating the effect of the automatic expansion valve in the by-pass between the condenser and the suction line, so you very naturally and quite properly wondered why it would not be possible to eliminate the CP valve and depend entirely upon the AEV to maintain a constant suction pressure, and consequently a constant evaporator temperature, regardless of variations in load or compressor capacity.

BY-PASS AEV USED ALONE

Some automobile air conditioning systems depend on a by-pass valve alone to maintain a constant evaporator temperature regardless of variation in load or in compressor capacity due to variations in engine r.p.m.

It appears that the system that you describe depends mainly upon the CP valve to maintain constant evaporator temperature regardless of variations in load and compressor capacity. However, during times when the heat load on the automobile body is light and the capacity of the compressor is high (such as during fast driving on a cool day), the suction pressure to the compressor might be quite low —possibly into a vacuum.

In such cases, the automatic expansion valve comes into play when the suction pressure to the compressor gets down to 15 p.s.i.g. The pressure in the evaporator stays at 30 p.s.i.g. and the evaporator temperature stays at 32°, but the suction pressure is held up to a minimum of 15 p.s.i.g. by the AEV in the by-pass.

CP VALVE SHOULD REDUCE SUPERHEAT TO COMPRESSOR

One advantage of the use of the CP valve is that it reduces the amount of by-passed refrigerant required and thereby probably reduces the superheat to the compressor. Using the by-pass valve alone, a great deal of refrigerant must be by-passed from the condenser to the compressor suction under conditions of light load, particularly at high road speeds and consequently high compressor capacity.

Under such conditions, care must be taken that the great amount of superheat in the by-passed gas does not cause overheating of the compressor and damage to it, particularly its valves.

There seems to be no reason why the AEV alone, reset to 30 p.s.i.g., would not do the same thing. Thus the CP valve does not seem to be necessary.

Provided, that the AEV is large enough to by-pass enough refrigerant to the suction line to keep the suction pressure up to 30 p.s.i.g., even when the compressor capacity and the load on the evaporator are badly out of balance; that is, when—as during fast driving on a cool day—the compressor capacity is greatly in excess of the load on the evaporator.

If the AEV is a small one, say of ½-ton capacity, it is doubtful if it would be large enough to maintain a balance between the compressor capacity and the evaporator load and maintain an evaporator temperature of 30° or more.

Moreover, you may find that with the CP valve removed, the AEV may have to pass so much liquid to the suction line that you may overtax the ability of the suction line to evaporate the liquid "Refrigerant-12" by-passed by the AEV, so you might cause the compressor to be fed quite a little liquid, thus causing dilution of oil in the compressor, and liquid slugging, either of which would result in noisy compressor operation, excessive vibration, and in time, damage to the compressor.

So, why not remove the CP valve, reset the AEV to 30 p.s.i.g., and see what happens? There should not be very much difference in operation, but if there is, and operation is not as satisfactory, you can always reinstall the CP valve, and reset the AEV back to 15 p.s.i.g.

In the above we have assumed that liquid control is by means of a thermostatic expansion valve.

TOP SECRET REVEALED!

The closely guarded secret of how hundreds of refrigerator and air conditioning service and repair men find the extra time to take on more jobs — take home a bigger pay envelope, has been revealed. It's Frankell's Hermetic Compressor Opener — a fully proven, precision engineered unit that requires only 2 minutes of a man's time to open any shape compressor (up to 20" in dia.) — regardless of the position of the weld. It's easy as A,B,C, — anyone can do it . . . no special fixtures or jigs required . . . and just one hermetic job a week pays for this time saving, money making wonder. Remember, when you repair a hermetic compressor — the profits are big.

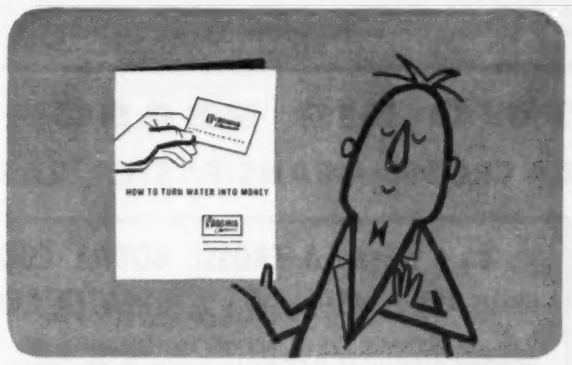
$695 NET F.O.B. N.Y.

Ask about our low cost rental plan.

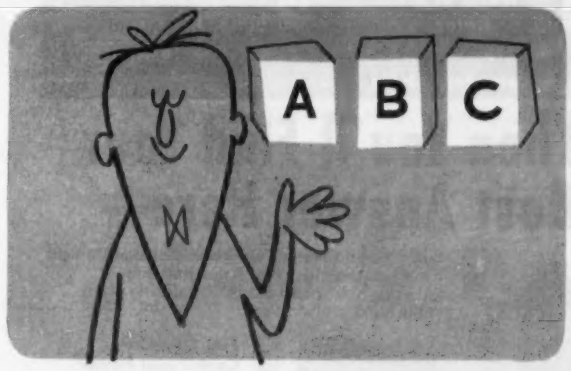
FRANKELL MFG. CO., INC.,
1074 Home Street, New York 59, N. Y.

WRITE DEPT. A, for complete information.

"VIRGINIA" gives you the method and the product to "Turn Water into Money"

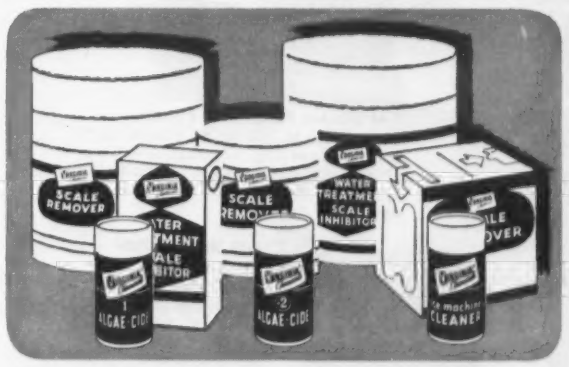


It's true. You can increase business volume from your present accounts and open up new customers as well—prevent "poaching" by competitors. You can literally "Turn Water into Money" with the new "Virginia" plan of water treatment service. Here's how you can do it—



(1) Convert your water treatment business from an emergency call basis to a steady service; (2) spot potential mechanical failures before they actually occur; (3) offer a service your competitors cannot match; (4) make yourself so valuable to your customers that they won't think of shopping elsewhere.

Hand in glove with the "Virginia" plan for water treatment are the many fine "Virginia" chemicals available for better service. Our Water Treatment Scale and Corrosion Inhibitor protects equipment, reduces scale buildup on metal. Dosage is continuous, automatic and effective. Blended glassy polyphosphates provide slow, controlled dosage. Simple and quick.



Other "Virginia" chemicals for reliable water treatment service include Solid and Liquid Scale Removers, Algae-Cides #1 and #2, and Ice Machine Cleaner. Your wholesaler stocks them. For your free copy of the folder, "How to Turn Water into Money," write Refrigeration Division, VIRGINIA SMELTING COMPANY, 133 Jefferson St., West Norfolk, Va.

ESOTOO • V-METH-L • CAN-O-GAS • VASCOCEL • PERMAGUM • PRESSTITE TAPE • SUNISO REFRIGERATION OILS
WATER TREATMENT CHEMICALS • NATIONAL SALES AGENT & REPACKER FOR DU PONT'S FREON REFRIGERANTS

Available in Canada and many other countries

VIRGINIA® Chemicals

Men on the Move . . .

Westinghouse Electric Corp.—ROBERT W. AYLING has been named engineering section manager, large compressors, at the air conditioning division in Staunton, Va. He was formerly manager of compressor development for the Unitary Equipment Div., Carrier Corp.

GORDON V. WAHLIN has been named manager of the Detroit district of Westinghouse Appliance Sales. Wahlin has been with Westinghouse since 1947. He succeeds J. J. RIGGS who resigned to become vice president and marketing manager for Argus Camera Co., Ann Arbor, Mich.

Airtemp Div., Chrysler Corp.—New district managers for packaged air conditioning and heating equipment have been appointed. J. J. McMAHON, formerly Philadelphia district manager, has been transferred to a similar post in Dayton. L. W. McINTEER assumes McMahon's former post. McInteer joined Airtemp after several years with another air conditioning firm.

WILLIAM H. LEEDY was appointed district manager for room air conditioners in the Detroit district. He has been in the air conditioning field for more than 20 years.

HERBERT K. HENRY was named manager of marketing services. He has been supervisor of the Plans & Marketing Div. of N. W. Ayer & Son, Philadelphia, advertising agency.

Frigidaire Div., General Motors Corp.—I. C. HARTZELL, manager of material control and purchasing since 1935, has retired. WILFRED H. BEST was transferred from the Chevrolet division in Detroit to Dayton as manager of material and production control. JOEL T. HEAVIN, director of purchases under Hartzell, became purchasing agent, reporting directly to the general manager.

The Trane Co.—KENNETH MIROV has been appointed assistant manager of the San Francisco sales office to which he was assigned earlier.

IAN M. DENNIS has been assigned to the Newark sales office as a new sales engineer of residential and self-contained air conditioning equipment. He joins Trane with 14 years' experience in the air conditioning field.

DAVID L. CANFIELD has been assigned to the Detroit sales office as a new sales engineer of residential and self-contained air conditioning equipment. He has had three years' experience as a sales engineer.

Dunham-Bush, Inc.—H. G. BEMIS has been appointed sales engineer in the St. Louis area. He formerly was associated with Mauller Air Conditioning and Bemis Supply in St. Louis in a similar capacity.

Admiral Corp.—MARTIN SHERIDAN has rejoined Admiral as director of public relations. He held the same position from 1951-1957 when he returned to Boston to serve as director of information and publications for The New England Council.

Appointment of JOHN N. BEETS, SR. as a regional sales manager was announced. He will cover distributors in Kansas City, St. Louis and Springfield, Mo.; Wichita, Omaha, and Des Moines. He was formerly with Lee Wholesale Co., Kansas City, Mo.

Friedrich Refrigerators, Inc.—PAUL T. JUUL, formerly on the management and research staff at Convair In Fort Worth, has been named chief industrial engineer.

Wolverine Tube, Div. of Calumet & Hecla, Inc.—BRUCE C. DOERING has been appointed sales representative in the Cleveland district. Formerly sales representative in the general sales office, he will now service northern Ohio.

General Electric Co.—W. L. BREAULT has been appointed manager of manufacturing in the air conditioning department at Appliance Park. He was formerly manager of manufacturing for the dishwasher and "Disposall" department. He succeeds GEORGE J. KANE who moved to another department.

STANLEY A. GORSKI has been named manager of appliance timer product sales for the Appliance Control Dept. He was formerly with G-E's Household Refrigeration Dept.

Allis-Chalmers Mfg. Co.—Appointment of JOSEPH J. JACOBS as assistant chief engineer of the West Allis pump department of the General Products Div. has been announced. He has been engineer-in-charge of design in the pump department.

Minneapolis-Honeywell Regulator Co.—HARRY D. RUCH was named product sales manager for the company's newly-developed line of electric instrumentation. He joined the Brown Instruments division in 1939 and for the last 12 years was field sales engineer for the Philadelphia branch office.

Amana Refrigeration, Inc.—DONALD F. WILLIAMS has been named chief cabinet engineer. He was recently associated with appliance manufacturing in Columbus, Ohio.

T. A. PARKS has been appointed assistant manager of the company's newly-located export division. Amana moved its export activities from New York City to the Iowa home office. Parks formerly was associated with Collins Radio Co., Cedar Rapids.

Revco, Inc.—EDWARD J. VONARB was elected vice president-engineering. He joined Revco in 1956 as director of engineering.

George E. Bagwell Co. (Montgomery, Ala.)—EDWARD DENNIS was appointed senior engineer and assistant manager. He has been with Rohm & Haas, engineering firm, as plant engineering director at its facilities at Redstone Arsenal, Huntsville.

Kirk Industries—HENRY O. NORTON has been appointed to the newly-created position of national sales manager for this manufacturer of gas refrigerators. Norton was formerly with Philco-Bendix as eastern manager of utility sales.

Superior Valve & Fittings Co.—GEORGE R. ALLEN, vice president, was elected to the board of directors. He will continue as vice president and general manager of sales.

Arkla Air Conditioning Corp.—G. J. TANKERSLEY, president of Western Kentucky Gas Co., was elected a member of the board of directors. He is a director in the Southern Gas Association and chairman of its heating and air conditioning committee.

Taco Heaters, Inc.—Appointment of ROBERT F. ELLIOT as sales representative, national accounts, was announced. He has been Chicago representative for Keckley Co. and Chicago sales manager for General Blower Co.

Ilg Electric Ventilating Co.—STANTON W. SMITH has been appointed Milwaukee office manager. He was previously assigned to Ilg's sales office in Cincinnati.

Drayer-Hanson—JAMES HACKBARTH has been added to the company's expanding sales engineering force. He has had several years' experience with contracting organizations handling York products.

DO YOU FIND YOUR PUMP PROBLEM HERE?

A — Water Supply, Air Conditioning, Refrigeration, Cooling Towers, Sump Pumping, Etc.

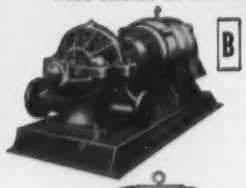
B — Booster Service, Cooling Towers, Water Treatment, Water Circulation, Brine Service, Etc.

C — Hot Water Circulation, Ice Water or Brine, Clear Water, Boilers, Booster Service, Etc.

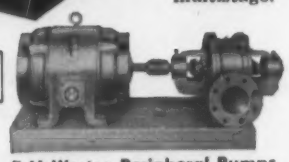
D — Hot and Cold Liquids, Refrigerants, Boiler Feed, Cooling Towers

Then You'll Find Your Best Answer Here—

A — F-M Pomona Water-Lubricated Turbine Pumps
Easily installed, easy to adjust for varying field conditions. Available with wide choice of drivers.



B — F-M Split-Case Centrifugal Pumps
Capacities, pressures and sizes for any requirements. Single-stage or multistage.



C — F-M Westco Peripheral Pumps
Capacities to 200 gpm. Pressures to 900 ft. Sizes 1½" through 2½". Horizontal single-stage or multistage. Develops high pressure at normal operating speeds.

D — F-M Builtogether Centrifugal Pumps
Capacities to 900 gpm. Pressures to 525 ft. Sizes ¾" through 5". Single-stage or multistage.

FREE! Expert Engineering Help at Your Service

Be *sure* of low-cost, foolproof pumping installations that match your exact requirements...call in your Fairbanks-Morse Sales Engineer. Take advantage of his broad technical background and expert knowledge of pumps for air conditioning, plumbing and heating. Call him today, or write Fairbanks, Morse & Co., 600 So. Michigan Ave., Chicago 5, Illinois.

See Sweet's Product Design Catalog File for complete F-M Pump Line.

FAIRBANKS-MORSE
a name worth remembering when you want the BEST

PUMPS • SCALES • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY
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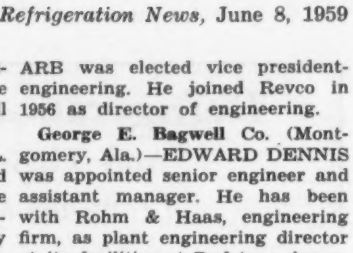
TWO BIG REASONS WHY . . .
LA CROSSE MEANS FASTER, EASIER SALES FOR YOU!

1. NEW LA CROSSE BOTTLE COOLER
UP TO 45%...45%...45% GREATER CAPACITY

Only La Crosse's "years ahead" engineering could create the increased capacity of the new La Crosse Bottle Coolers. The 6'6" model, with coil only, holds 40 cases . . . other models from 4'6" to 10'6" hold from 26 cases to 66 cases!



2. THE NEW FLAKE KING

It's new . . . all new . . . the Flake King joins the complete line from La Crosse! Here's top La Crosse quality . . . trim, clean lines . . . dependable, economical operation . . . all the "built-in extras" you expect in La Crosse equipment.

★ 550 lb. of hard dry ice every 24 hours
★ 280 lb. and 470 lb. storage capacities
★ Fully automatic . . . easily installed
★ Smooth, silent, dependable operation
★ Top quality—Economically priced

The new La Crosse Flake King is attractively finished in gray hammertone baked enamel, large, well insulated stainless steel storage bin at convenient working height, slide away doors, uses a minimum of floor space and is down right "stingy" in water usage.

GET ON THE WINNING TEAM . . . SELL *LA CROSSE!*

LA CROSSE COOLER CO.
FACTORY & GENERAL OFFICE,
3000 LOSEY BLVD., LA CROSSE, WIS.
EXPORT OFFICE: 60 E. 42ND ST., NEW YORK, CABLE: EXPEDITE

Anaconda's 'Flexpipe' Described In Bulletin

WATERBURY, Conn. — A bulletin describing its "Flexpipe," a flexible metal connector for pumps, compressors, and industrial piping, is available from The American Brass Co.'s Anaconda Metal Hose Div.

According to the company, Flexpipe absorbs vibration, reduces piping failure, prevents leakage, and is easily installed. It is available in many metals (bronze, hot-dipped galvanized steel, stainless steel), sizes, and end fittings.

In addition to specifications and other data, the bulletin (FP-4) includes installation suggestions and illustrations of diversified applications. Requests for copies should be addressed to Anaconda Metal Hose Division, The American Brass Co., P. O. Box 791, Waterbury, Conn.

Sutton Auction--

(Concluded from Page 1, Col. 4)

line. 5. Dehumidifier line.

Included with these product lines will be such items as production dies, tooling, jigs and fixtures, engineering data and drawings, patent rights, production and sales data, service parts, work in process, and advertising matter.

Remaining schedule for the auction sale, being conducted by Samuel L. Winternize & Co. of Chicago, is as follows: Tuesday and Wednesday, June 9 and 10, coil manufacturing line and the machinery equipment, etc. located in plant No. 1 and engineering department. Thursday, June 11, machinery and equipment located in plant No. 2. Friday, June 12, office equipment and business machines.

Chicago Contract--

(Concluded from Page 1, Col. 5)

ness manager of the Chicago Journeyman Plumbers Local 130, declared that there will be a "crackdown" on plumbers leaving their jobs early, the agent stating that the public is entitled to eight hours work five days a week.

Anthony Dvorak, chairman of the labor relations board of the contractor groups, signed the agreement in the name of Plumbing Contractors Association of Chicago; North Cook County Plumbing and Heating Contractors Association; and the West Suburban Plumbing Contractors Association.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

York Stand--

(Concluded from Page 1, Col. 4)

their units according to NEMA standards, gain a reputation for compliance with NEMA standards, and then subsequently market any number of other models with rated capacities arrived at by other means.

"2. Already, we know of examples of NEMA nameplate ratings that materially overstate the capacity of the units. The rules for compliance and the penalties for violation are not yet forceful enough to be effective.

"It is obvious that if the NEMA program is to succeed in its excellent objectives, participating firms should list *all* units they manufacture with ratings arrived at by one inflexible standard. This will put an end to the present compressor, maximum and 24-hour ratings that destroy public confidence in any ratings, NEMA included.

"There must be compliance with both the letter and the spirit of the agreement or we will find companies saying 'Our 10,000 B.t.u.'s are bigger than your 10,000 B.t.u.'s.'

"The present NEMA program, in spite of its weakness and the manner in which some manufacturers are abusing it, is certainly a step in the right direction. York is extremely anxious to see it carried to its logical conclusion and become a strong code under which all manufacturers can cooperate with resulting benefits to distributor, dealer, and consumer.

"The Room Air Conditioner Section of NEMA now represents about 75% of the room air conditioner industry and is obviously the best vehicle to give the industry the stabilization we feel is vital."

Room Unit Tax--

(Concluded from Page 1, Col. 2)

conditioner excise tax, which limits its application to units under 1 hp.

The IRS explained that it now plans to amend the regulation which implements the Federal law imposing the excise tax, rather than amend the IRS ruling. This involves a more formal procedure, with hearings if requested by industry, and thus might take several months.

Mier Named Export Mgr. Of Century Electric

ST. LOUIS — William Eric Mier has been made Century Electric Co.'s export manager to succeed Charles White who retires June 30.

White has spent over 30 years in the export business for Century Electric. Mier joined Century in 1951.

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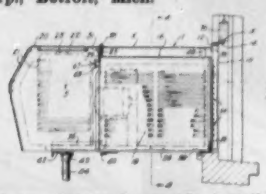
PATENTS

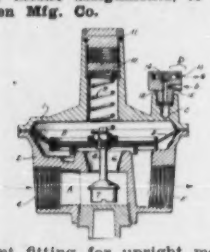
Week of Feb. 3 (Concluded)

2,871,778. ADAPTER FOR INSIDE INSTALLATION OF AIR CONDITIONERS OF THE WINDOW MOUNTED TYPE. Howard E. Brehm, Jr., Cleveland Heights, and Albert F. Mitchell, East Cleveland, Ohio, assignors, by mesne assignments to Rupp Corp., Detroit, Mich.



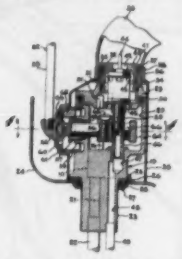
1. An adapter for inside installation of an air conditioner of the window mounted type characterized by a removable front casing; said adapter comprising a casing section made up of a top wall and side walls, certain of which walls are provided with air passage means, the casing section being open at its front end, substantially parallel laterally spaced rails extending along the lower edges of the side walls of the casing section from near the rear of the casing section a substantial distance beyond the front end thereof. . . .

2,871,870. GAS PRESSURE CONTROL MEANS. Edward R. Downe and Ward B. Travers, Elyria, Ohio, assignors, by mesne assignments, to The C. A. Olsen Mfg. Co.



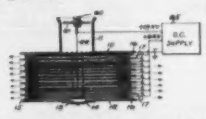
A vent fitting for upright mounting on a gas pressure regulator at the vent thereof, said fitting having a nipple end, a cavity at its other end, a central longitudinal passageway leading from said nipple end to said cavity, a closure for the mouth of said cavity, a ball check valve arranged within said cavity to seat at the mouth of said passageway, said fitting having a leak limiting orifice arranged laterally of said cavity in communication therewith and with the exterior of the body to permit limited egress of fluid therefrom. . . .

2,871,880. SINGLE CONTROL HANDLE OPERATED MIXING FAUCET HAVING A DIVERTER VALVE ASSOCIATED THEREWITH. Frederick W. Leuthesser, Cincinnati, Ohio, assignor, by mesne assignments, to American Radiator & Standard Sanitary Corp., New York, N. Y.



1. In a single lever mixing faucet having a diverter valve associated therewith a faucet body having a mixing chamber therein, a cap closing the upper end of said mixing chamber, means to mount said diverter valve unit in said cap, a spout rotatably mounted in said cap above said diverter valve unit, a tailpipe depending from the lower end of said diverter valve unit into and through said mixing chamber, said tailpipe constituting an outlet passage of said diverter valve unit. . . .

2,871,974. Electrostatic PRECIPITATORS. Mervin C. Werst, Penn Township, Allegheny county, Pa., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa.

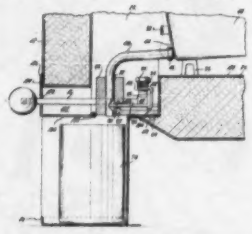


1. An electrostatic precipitator comprising a plurality of spread-apart, parallel collector plates, an inlet plate extending parallel to said plates on one side thereof, an end plate extending parallel to said collector plates on the other side thereof, said plates except for said end plate having aligned openings therein, a non-discharging ionizer electrode having a cylindrical inner surface on the outer side of said inlet plate around the opening therein, an ionizer wire within said electrode and in the openings in said collector plates, means for supporting one end of said wire adjacent the outer end of said electrode, and means supporting the other end of said wire adjacent said end plate.

2,872,078. BEVERAGE DISPENSER. Leo Kennedy, Mount Pleasant, Iowa.

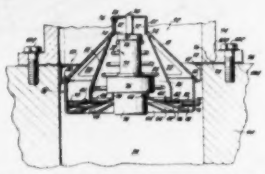
Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

1. A dispensing apparatus comprising in combination, an insulated cabinet enclosing a refrigerating compartment, a removable and replaceable



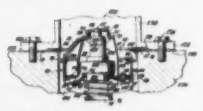
fluid container in said compartment, a valve body of high heat conducting material secured within said compartment at an edge thereof and exposed to refrigeration by said compartment, said valve body being spaced from said container. . . .

2,872,117. THERMOSTATICALLY OPERATED VALVE. Louis M. Puster, Knoxville, Tenn., assignor to Robertshaw-Fulton Controls Co., Greensburg, Pa.



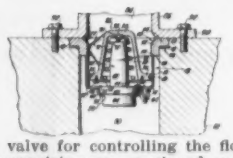
1. In a balanced pressure insensitive valve for controlling the flow of fluid, the combination comprising an apertured support member, a valve seat on said support member, a housing carried by said support member and provided with guide means thereon, support means carried by said guide means thereon, support means carried by said guide means, sealing means carried by said support means, a valve member operatively engageable with said guide means, said support means and said sealing means and being movable between a plurality of flow controlling positions relative to said valve seat. . . .

2,872,118. THERMOSTATICALLY OPERATED VALVE. Louis M. Puster, Knoxville, Tenn., assignor to Robertshaw-Fulton Controls Co., Greensburg, Pa.



1. A flow control valve comprising an apertured support member, a valve seat on said support member, a hollow sleeve member having a closed end carried by said support member and an opposite open end provided with guide means, a hollow valve member cooperable with said guide means and movable between a plurality of controlling positions relative to said valve seat, means on said guide means defining a recess, sealing means carried in said recess and being engageable with said valve member. . . .

2,872,119. THERMOSTATICALLY OPERATED VALVE. Louis M. Puster, Knoxville, Tenn., assignor to Robertshaw-Fulton Controls Co., Greensburg, Pa.



1. A valve for controlling the flow of fluid comprising an apertured support member, a valve seat on said support member, a housing integrally formed on said support member and provided with guide means thereon, sealing means carried by said guide means. . . .

2,872,164. HEAT EXCHANGERS. John R. Wilson, Penn Township, Allegheny County, Pa., assignor to Hanlon & Wilson Co.

1. In a heat exchanger having a housing with an air inlet and an air outlet for flow of air to be warmed therethrough, the combination comprising a duct for conveying heated gases through the housing, said duct being disposed inside said housing and spaced from the walls thereof, said duct comprising two end parts and a center part with the center part interconnecting the end parts, one of said end parts being adapted to be connected to a source of the heated gases.

(Continued on next page)

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MANUFACTURERS' REPRESENTATIVE—Sales—Service representation on commercial - industrial refrigeration and air conditioning products. Twenty-five years in the business. Territory—Pennsylvania, New Jersey, Delaware, Maryland, Virginia. Engineering services available. Can warehouse stock for area distribution. For further information write BOX A6280, Air Conditioning, Heating & Refrigeration News.

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ST. PETERSBURG, FLORIDA — $125.00 wk. Plus profit sharing plan to a combination A-1 serviceman and salesman to handle all service & sales for ice machine department. Job requires $5,000 investment in Dun & Bradstreet rated company. AUTOMATIC COOLING & HEATING COMPANY, 3535 8th Avenue South, St. Petersburg, Florida.

REFRIGERATION EXPERIENCE; person able to set up systems and test equipment for self contained commercial reach-ins, beverage coolers, display cases. Person selected will take charge of refrigeration department. Opportunity for person in such capacity now or capable assistant seeking advancement. Write attention President, HOWARD REFRIGERATOR CO., 4745 Worth Street, Phila. 24, Pa.

ENGINEER REFRIGERATION Controls—To head a department on design and development of commercial refrigeration control valves of all types; national corporation with midwestern manufacturing and engineering facility; salary and bonus commensurate with work background and ability. Send full details, qualifications and personal data to BOX A6172, Air Conditioning, Heating & Refrigeration News.

DESIGN, PRODUCT, application engineer—Leading manufacturer expanding line of residential heating and air conditioning equipment has positions for project design engineers: (1) Design engineer for residential heat pump and air conditioners, 2, 3, 5 horsepower. (2) Application engineer for residential gas furnaces. Must be college graduate with two years' experience. All replies held in strict confidence. Mail resume to BOX A6268, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION ENGINEER for product engineering section of small L. I., New York, company. Prefer man with experience as product or production engineer in packaged industrial products including refrigeration and compressed air. Resume and salary requirements BOX A6270, Air Conditioning, Heating & Refrigeration News.

MANAGER FOR new California branch of wholesaler of refrigeration and air conditioning supplies. Will consider man with limited experience but promising abilities. Can be California resident or person willing to relocate. Write full education, experience, personal information in own handwriting. Our employees know of this ad. BOX A6274, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION ENGINEER wanted who is capable of designing small refrigeration systems for household refrigerators and freezers and commercial cabinets. We purchase compressors but the man we choose must be familiar with design of high-side assemblies and sizing of evaporators of plate or finned coil type. Should have experience with automatic defrost methods. Applicants should give complete resume of education, experience and salary requirements. Reply to BOX A6276, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION, AIR conditioning and heating dept. manager to head up department for large midwest distributor of exclusive lines. Salary and incentive commensurate with ability and background. Send detailed resume of education, business, and personal data to BOX A6282, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION ENGINEER—Man experienced both in modern cabinet design and in the mechanical phase needed by well established company, which plans a complete new line of refrigerators, embodying an absorption system. State qualifications and salary requirements in your reply. BOX A6283, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

REFRIGERATED TRUCK—One—8 to 10 ft. body. Must be in good condition. For zero degree storage. Mail details and picture to SMITH REFRIGERATION, 2714 Noble Ave., Hamilton, Ohio, Phone Twinbrook 35785 or 49945.

GENERAL ELECTRIC compressors, condensing units and parts, new or used and repairable. State model numbers, horse-power, etc. Need other makes also. UNITED REFRIGERATION CORPORATION, 514 W. 12th St., Los Angeles 15, California.

EQUIPMENT FOR SALE

PRICE LIST R-94, discount 45% f.o.b. Washington C. H., Ohio, list prices for enclosed meat cases 6' $750.00, 8' $960.00, 10' $1180.00. Enclosed vegetable cases 6' $798.00, 8' 944.00, 10' $1090.00. Send for complete catalog. THE COFFMAN STAIR CO.—Refrigeration Div. (Formerly Morton Show Cases, Inc.) Washington C. H., Ohio. Phone 5-7861.

SOMBREROS? NO. Now good thermostatic expansion valves made in Mexico. Half ton $8.75, ¾ and one ton $9.90. Agate needle for long life. Secret charge for all temperatures, no adjustment in the field needed. Very compact. Try this valve for utmost performance and satisfaction. Order from FRIGOTHERM MECANICA AGENTS, P. O. Box 1416, Laredo, Texas.

BEVERAGE DISPENSERS—From 5 to 10 years old. Hold 7½ gallons drink beverage in animated glass display bowl. ¼ to ½ hp. refrigeration units. Dispensers are priced from $25.00 to $60.00 with all parts but will need minor repairs. Will send brochures on request. TRUE FRUIT PRODUCTS COMPANY, 4461 West Jefferson Ave., Detroit 9, Michigan.

FOR SALE: Two used CLS-415 10 ton Freon Westinghouse condensing units. 550 volt - 3 phase motors $600.00 each. 4730 N. 84th Street, Milwaukee 18, Wisconsin.

BUSINESS OPPORTUNITIES

WANTED: HEATING and cooling accessories. We are interested in new fabricated metal products to manufacture and sell to manufacturers and wholesalers of furnaces and air conditioners. Bob Main, VIKING AIR PRODUCTS, 5601 Walworth Avenue, Cleveland 2, Ohio.

FOR SALE—In Chicago, the opportunity you have waited for so long to purchase. A well established and growing commercial, air-cond. and domestic service business with top reputation. Complete repair shop, large parts inventory, nice office, service truck & etc. Must sacrifice for $18000.00 cash due illness. BOX A6278, Air Conditioning, Heating & Refrigeration News.

WELL ESTABLISHED commercial refrigeration business. Good trade area in university town in the Rocky Mountain area. Used store equipment, tools and office equipment, and service trucks. Owner has other interests. Price $32,500. Write BOX A6281, Air Conditioning, Heating & Refrigeration News.

MISCELLANEOUS

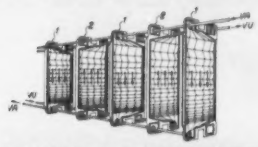
CONTROLS & RELAYS repaired like new. UNITED CONTROL REPAIR COMPANY, new address: 151 E. 126th Street, New York 35, New York.

ATTENTION REFRIGERATION Servicemen: Would you be interested in saving from 25 to 50% on many standard refrigeration and air conditioning parts and supplies? Send for our free circulars and catalogs. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

PATENTS

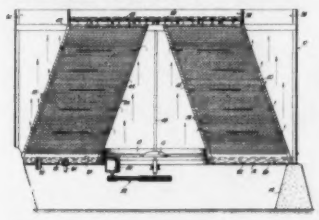
(Continued from preceding page)

2,872,165. PLATE TYPE HEAT EXCHANGER. Fritz Johan Wennerberg, Lund, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden.



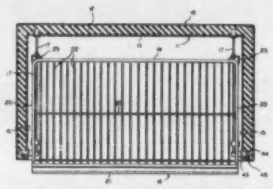
1. In a plate type heat exchanger, a pack of heat exchange plates defining a plurality of flow channels between adjacent plates of the pack and arranged to accomodate flow through said channels longitudinally of the plates, the plates being of uniform width and the channels being of a width substantially equal to the width of the plates, each channel extending substantially from end to end of the adjacent plates defining the channel. . . .

2,872,168. FORCED DRAFT PAN-IN-BASE COOLING TOWER. Leon T. Mart, Mission Township, Johnson County, Kans., assignor to The Marley Co., Kansas City, Mo.



In a forced draft, cross flow, vertical discharge water cooling tower, a substantially rectangular, open top casing having opposed ends and opposed side walls respectively setting off a space within the casing, a hot water distribution basin closing a portion of the top of the casing and forming, with the end walls thereof, a pair of upwardly facing air outlet openings. . . .

2,872,270. SLIDING REFRIGERATOR SHELF. Charles R. D'Olive, Winnetka, Ill., assignor to Chamberlain Corp., Waterloo, Mich.



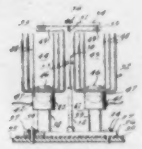
1. In a refrigerator, a cabinet having a liner having a rear wall and parallel spaced side walls extending therefrom, a sliding shelf within said cabinet, and means for supporting said shelf for free slidable movement with respect to said cabinet comprising two independent bars extending along opposite side walls of said cabinet, sockets in the rear wall of said cabinet having said bars loosely mounted therein and including resilient means biasing said bars toward the forward end of said cabinet, and individual supports for the forward ends of said bars accomodating independent lateral slidable movement of said bars with respect to the side walls of said cabinet, and retaining said bars from movement along said side walls toward the outer ends thereof.

Week of Feb. 10

2,872,730. METHOD OF PRODUCING FINNED TUBING. Dougan L. Jones, Lee's Summit, Mo., assignor to The Marley Co. Kansas City, Mo.

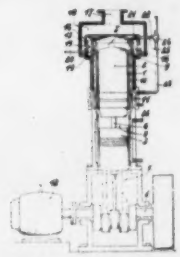
1. A method of brazing an aluminum fin to a tube having an outer surface of copper comprising the steps of initially coating said outer surface of the tube with cadmium and a fluxing material, said fluxing material being adapted to remove interfering films and oxides; applying the fin to the tube with the inner edge surface thereof in close abutting relationship to said outer surface of the tube; and heating the finned tubing to a brazing temperature only. . . .

2,872,788. THERMOELECTRIC COOLING APPARATUS. Nils E. Lindenblad, Princeton, N. J., assignor to Radio Corporation of America, a corporation of Delaware.



4. A thermocouple element for a thermoelectric heat pump comprising a plate of conductive material, a pair of bodies of dissimilar thermoelectric material mounted on said plate at one end thereof, members providing for the transfer of heat between said thermocouple element and the ambient, and means extending from said plate for supporting said members, said members being supported from said plate in abutting relationship with the other ends of said bodies.

2,872,789. GAS LIQUEFYING APPARATUS. Cornelius Otto Jonkers and Jacob Willem Laurens Kohler, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to North American Philips Co., Inc., New York, N. Y.

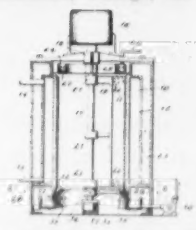


1. A cold-gas refrigerator being capable of condensing a gaseous mixture comprising a cylinder, two pistons in said cylinder, means operating said pistons in said cylinder with a constant phase difference, said two pistons and cylinder defining two chambers; a high temperature heat rejector for one of said chambers, a regenerator, and a low temperature heat absorber for the other of said two chambers. . . .

2,872,790. REFRIGERATOR FOR USE IN CONNECTION WITH ENGINES UTILIZING VOLATILE FUEL. Arthur A. Simpson and Herbert H. Denmark, New Orleans, La.

14. A refrigerating cabinet for use in conjunction with an engine utilizing a volatile fuel and provided with a fuel feed line and a vacuum line connected to its intake manifold, said cabinet comprising an inner box, a primary heat exchange tube open at one end to the atmosphere and at the other into a container serving as a drier, a vacuum tube adapted to be connected at one end to said vacuum line which extends in heat exchange relationship with said primary heat exchange tube through said drier. . . .

2,872,791. ICE MACHINE. William Kent Tomlinson, Chicago, Ill.



1. In a flake ice machine the combination of a vertical cylinder having a cylindrical surface on which water may be frozen to form a thin layer, means for supplying water to the upper margin of said surface, a rotor and means carried thereby for dislodging ice flakes from said surface, an annular trough positioned below said cylinder for indirectly collecting water falling from and adjoining said surface. . .

(To Be Continued)

Servicing Automobile Air Conditioners

(Vol. 4 — 1959 Models)

BY C. DALE MERICLE

ARTIC-KAR

Capitol Refrigeration, Inc.
3922 Kalloch Dr.
Dallas, Texas

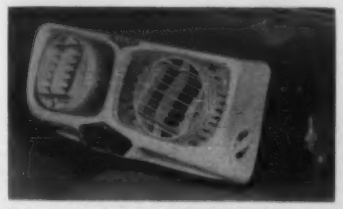


FIG. 1—Artic-Kar 1959 under-dash "Iceberg" model is essentially the same as the 1958 unit.

No important design changes are found in the 1959 standard models produced by this manufacturer, the units being essentially the same as those produced in 1957 and 1958.

A wide variety of units modified to a greater or lesser degree are offered for more than 40 different makes and models of foreign cars, however. Basic refrigeration cycle of these foreign car units is the same as the company's standard units.

Three models are continued in the 1959 Artic-Kar standard line, consisting of two under-dash units and a trunk mounted model.

The deluxe "Iceberg" under-dash unit has two fans or blowers which may be operated at high, medium, or low speed, an adjustable thermostat for controlling operation of the magnetic clutch and compressor, and four multi-directional air outlets. A pilot unit shows when the clutch is engaged.

"Penguin" under-dash unit is an economy model having a single fan with two multi-directional air outlets, three-speed fan control, and a thermostat which cycles the magnetic clutch to prevent icing of the evaporator but cannot be adjusted to provide temperature control.

"Husky" trunk unit features dual blowers, control of blower speeds, thermostat for cycling the magnetic clutch, pilot light to show clutch and compressor operation, and a section of heat exchanger hose line.

Refrigerant-12 is employed in the Artic-Kar line. Charge is approximately 2 lbs. in under-dash units, approximately 3½ lbs. in the trunk model.

Service data previously published on the company's 1957 and 1958 models will also apply to the 1959 standard units.

(Next: American Motors auto air conditioner models.)

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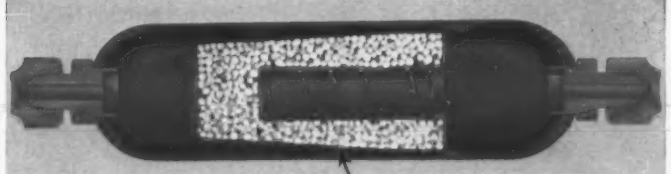

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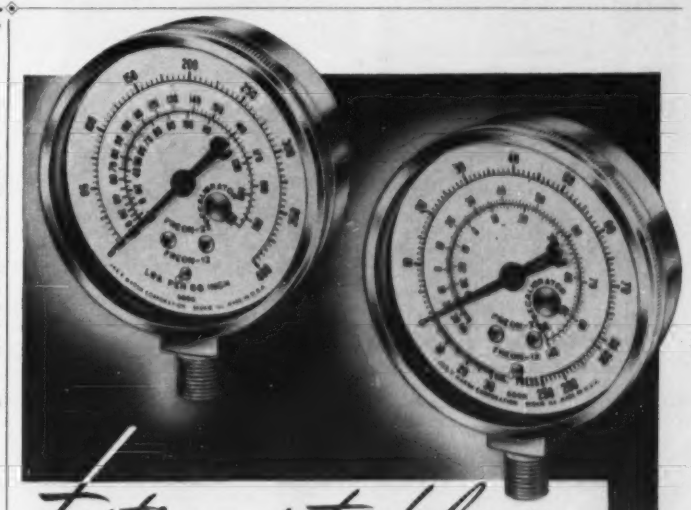

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JEFFERSONVILLE, INDIANA

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CONTRACTOR:

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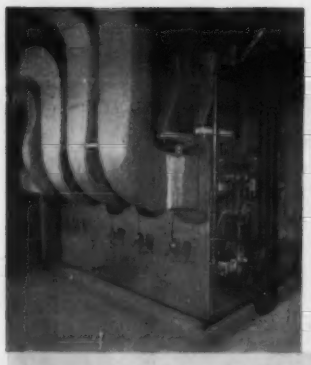
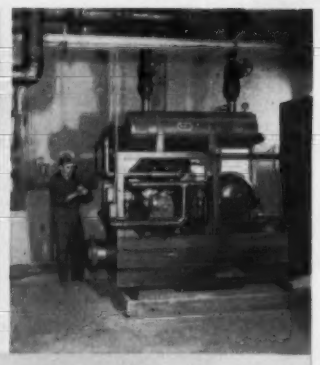
Dunham-Bush CRV Remote Room Unit in Clark County Memorial Nursery



Dunham-Bush MZ Multizone Unit



Heat-X (Dunham-Bush subsidiary) Package Chiller

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One of 115 installed Dunham-Bush CRV Remote Room Units

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Dunham-Bush is proud that the hospital building team selected its products for the entire air conditioning system.

All patient's rooms are individually comfortized by a Dunham-Bush CRV Remote Room Unit that furnishes both cool and warm air. These units are supplied with chilled water by a Heat-X package chiller. Air conditioning of larger areas such as operating room, recovery room are simultaneously and individually zone controlled with a Dunham-Bush 'MZ' multizone unit and VAH unit. Both of these units are served by a Brunner 40 H.P. condensing unit.

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